

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Gleanings in Bee Culture

VOL. XXXVII

April 1, 1909

No. 7



A CALIFORNIA DRIVE WITH THE MOUNTAINS IN THE DISTANCE.
A CALIFORNIA APIARY FORMERLY OWNED BY A. TITOFF; LATER BY E. M. GRAVES.

PUBLISHED BY



THE A. I. ROOT COMPANY, MEDINA, OHIO, U. S. A.

Root Queens

Quality

It is poor economy to allow old or inferior queens to remain in the hive. Introduce some of the best stock obtainable and see what a marked improvement there will be in the crop of honey gathered. Poor queens do not produce rousing vigorous colonies necessary to gather the largest amount of honey in the height of the season. Geo. E. Capwell, of Cottonwood Falls, Kans., writes: "I have one of your queens whose bees have filled three comb-honey supers and one extracting-super this season." Another customer from Illinois says: "My breeding queen, bought of you, has produced 115 lbs. of choice comb honey; and, besides, I took 29 frames of brood from her to make nuclei. She lays even on the outside combs next to the hive in a ten-frame hive."

Grades

We are prepared to furnish queens of any grade desired, from an untested Southern-bred to the very best breeding-queen obtainable. We also have imported queens. Our Southern-bred stock is not cheap, but is reared by the very best breeders from our own breeding queens. Our home-bred are raised under our direct supervision, and there are no better queens to be had anywhere. We make careful selections of high-grade stock when a customer is anxious to get something especially fine.

Prices

HOME-BRED ITALIAN QUEENS.

Untested queen.....	April and May,	\$1.25	June to October,	\$1.00
Select untested queen	" "	1.50	" "	1.25
Tested queen	" "	2.50	" "	2.00
Select tested queen.....	" "	3.50	" "	3.00
Breeding queens.....	" "	5.00	" "	3.50
Select breeding queens	" "	9.00	" "	7.50
Extra-select	" "	12.00	" "	10.00

SOUTHERN-BRED ITALIAN QUEENS.

Untested queen	April and May,	\$1.00	June to October,	\$.75
Select untested queens	" "	1.25	" "	1.00
Tested queens.....	" "	1.75	" "	1.50
Select tested queens	" "	3.00	" "	2.50

Discounts

Even if you have a large apiary it will pay you to requeen every colony if necessary to secure the best results. We make the following discounts for quantity orders accompanied with cash:

25 at one time,	5 per cent from list prices.
50 " " " 10	" " " " "
100 " " " 15	" " " " "

We can deliver quantity orders in installments if so desired.

Book Orders at Once

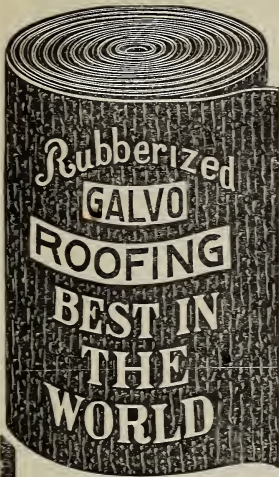
Do not delay sending in your order. During April, May, and June we have such a rush of queen orders that our queen department is crowded to the utmost. A great deal of this hurry and confusion could be avoided if orders were sent in early. Send your orders now with a remittance in part or whole, and specify the date you want the queens delivered, and have the matter off your mind and on our books.

Delivery

We expect to fill small orders for Southern-bred queens within a day or two after the order is received after April 1st. If quantity orders are sent in a week in advance of the specified date for delivery we will be able to fill them without delay. We can not supply home-bred untested before May 15, and quantity orders for this grade can not be filled by return mail until June 1st. Tested and higher grades we can send from now on by return mail, provided the weather is not altogether too unfavorable when the order is received. We have a good stock of these high-grade queens, and can make careful selections for early orders.

IMPROVE YOUR STOCK THIS SEASON, AND KEEP
BETTER BEES.

The A. I. Root Co., Medina, Ohio



READY ROOFING 50¢ PER SQ.

At this price our "Gem" brand ready roofing, 108 sq. ft. to the square. The best bargain ever offered. Only 3,000 squares for sale. No supplies included at this price. We do not recommend the purchase of this grade; read our wonderful offer on the best roofing in the world.

Rubberized Galvo Roofing!

The highest-grade Roofing covering manufactured. Guaranteed absolutely equal or superior to any other kind manufactured. Positively covered by a binding guarantee that protects you in every way. You make no mistake and are not gambling when you buy this grade. We affirm that no other concern anywhere can make you a lower price on ready roofings that we can. We have for sale a large quantity of roofing purchased by us direct from the manufacturers. It is the regular grades made by them. It is not in continuous lengths to each roll. A roll of roofing usually comes in one continuous piece, but the roofing we are offering is put up two to five pieces to a roll. That, of course, does not affect the quality at all. In fact, some people prefer it, as it is easier to handle. We furnish plenty of material, so that all laps can be properly taken care of. We are not allowed to tell you the name of the manufacturers for confidential reasons. We are putting it out under our own brand and name, and are backing it with this guarantee, viz: That it will positively give as good service and last as long as any ready roofing manufactured. There is any roofing better than this, we haven't heard of it. Our price 50 cent below what is usually asked for roofing of similar quality. One ply, per square, \$1.25; two ply, per square, \$1.40; three ply, per square, \$1.75. The lowest prices ever quoted on good roofing.

FREIGHT PREPAID IN FULL BY US,

if your home is within 400 miles of Chicago, or east of the Mississippi River, and north of the Ohio River. Rates to other points on application. This freight-prepaid proposition refers only to the Rubberized Galvo Roofing in this advertisement, and does not include the 50¢ per square Roofing offered above, nor does it apply to any other item advertised. Here is a roofing that is slate color, tough leather-like material. It is made of a combination of wool felt and highest grade of natural asphalt. It is water-proof, lightning-proof, and fire-proof. Water runs off it as it does off a duck's back. It will not taint rain water. It makes buildings warmer in winter and cooler in summer. It is not affected by acids, alkali, or gases. It has a rubbery surface, and on this account we call it "RUBBERIZED GALVO ROOFING." It does not contain coal tar, residuum, nor any thing that will deteriorate in the weather. The best grade of natural asphalt known is used in its manufacture. It will positively give lasting service. It will wear as long as the building stands, provided you give it ordinary care. It does not require a coating after it is on the roof. It toughens and hardens with age. About a year after laying it we would recommend that you give it a coat of mineral paint, and every few years repeat the operation. We furnish with each order sufficient cement to make the laps, besides nails and caps to put it on. Any one with an ordinary hammer can lay this roofing. You can put it on over shingles without removing same. It is scientifically manufactured to take care of the laws of contraction and expansion. It requires but little time to put it on your roof. Two men can lay twenty squares a day. It is appropriate for any kind of building, either factory, dwelling, barn, store, church, etc. It is also used as siding or lining, especially the lighter grades. It is put up 108 square foot to the square. Some rolls are put up one square and some two squares to the roll. You can lay it from left to right or from eave to comb, whichever is the easiest to apply. We urge that you

WRITE FOR FREE SAMPLES!

Write to-day for free samples, or send us your order direct. We will ship C. O. D. to any point where a deposit of 25 percent in cash accompanies the order. Balance to be paid when material reaches destination.

SPECIAL FENCING SALE!



We offer 100,000 rods of heavy galvanized fencing, either diamond mesh, like illustration, or square mesh. Fencing that is guaranteed equal to the very highest grade manufactured. We have it in all widths. It is put up regularly in 10 and 20 rod reels. Price per rod as follows: 18-in., 14¢; 20-in., 15¢. Other heights in proportion. 26-in. Poultry Fencing, 2-in. mesh, per rod, 23¢. Galvanized Barbed Wire, \$2.45 per 100 lbs. Two or four point regular galvanized Barbed Wire, put up on reels, per 100 lbs., \$2.45. Painted Barbed-Wire, per 100 lbs., \$2.25. Our Special Galvanized high-grade light-weight Barbed Wire



put up on 80-rod spools, price per spool, \$1.80. Painted Twisted Wire per reel, \$2.00. Galvanized Fence Wire, \$1.50 per 100 lbs. At this price we will supply you new Galvanized Wire Shorts. They are put up 100 lbs. to the bundle. By shorts we mean wire in lengths from 50 to 200 ft. Good for all general purposes. Our price on gauges 11, 12, and 14, \$1.50 per 100 lbs. Other gauges in proportion. BB Telephone Wire No. 12, \$2.85 per 100 lbs. Write for price list and catalog.



Mixed Wire Nails, Per Keg, \$1.60

These Nails were on board barge sunk in the Ohio River, and are more or less rusty. They are practical for use and make a fine handy assortment. Put up mixed, just as they come, 100 lbs. to the keg. Sizes from 3 to 40 D. Per Keg, \$1.60. Nails, straight sizes, just one kind to a keg, with slight surface rust, sizes 3 to 60 D; also Casing-Nails and Finishing-Nails, all kinds: price per keg of 100 lbs., \$2.00. First-class bright, clean, new Nails, 20 D common, per keg, \$2.20.



100,000,000 Ft. of New Lumber at Wrecking Prices!

We purchased direct from the Mills, at various Forced-Sales, thousands of carloads of high-grade, first-class, brand-new Lumber. We bought it at sacrifice prices and we are offering it for sale at a reasonable margin of profit. This is an opportunity of a lifetime to buy the very best Lumber manufactured, at prices less than the dealer or jobber can ordinarily buy it for. Send us your bill for estimate. Write us to-day.

CHICAGO HOUSE WRECKING CO., 35th and Iron Sts., MAYO

Send for Free Catalog No. 688

We publish a book of some 500 pages, containing a general record of our goods, and showing millions of dollars' worth of merchandise secured by us at Sheriffs' Sales, Receivers' Sales, and Manufacturers' Sales. It lists Building Material and Supplies, Machinery, Roofing, etc.

Money Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

EASTERN GRADING-RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

No. 1 WHITE.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separated honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

No. 1 LIGHT AMBER.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separated honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

No. 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separated honey to average not less than 19 pounds net.

Cases of half-separated honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 21 pounds net per case of 24 sections.

KANSAS CITY.—The honey market still continues sluggish, and comb and extracted are selling very slowly. The usual demand that we expected at this season has not been realized. Alfalfa comb shows considerable signs of granulation. We quote No. 1 white comb, 24 sections, \$2.65 to \$2.75; No. 2 white and amber, 24 sections, \$2.25 to \$2.40; white extracted, per lb., 7 to 7½; amber ditto, 6 to 6½. Beeswax, 25 to 28.

C. C. CLEMONS PRODUCE CO.,
Kansas City, Mo.

March 22.

INDIANAPOLIS.—There is a very favorable demand for best grades of both comb and extracted honey; and while jobbing houses are fairly well stocked, very little honey is now being offered by producers. I note some arrivals of fancy comb at 12½; No. 1 white, 12; white-clover extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is so slight that the prices are irregular. Beeswax is steady at 29 cents cash or 31 in exchange for merchandise.

March 15.

WALTER S. POWDER, Indianapolis.

BOSTON.—We quote fancy white comb honey, 15; No. 1 ditto, 14; light extracted, 9; light amber, 7½; amber, 6½. Beeswax, 30.

March 20.

BLAKE-LEE CO.,
4 Chatham Row, Boston, Mass.

CHICAGO.—The market during the past two weeks has been a very quiet one, with but little demand for honey of any kind. Prices are practically the same as in our last quotation.

March 25.

R. A. BURNETT & CO.,
Chicago.

ZANESVILLE.—There is some demand for honey, though the market is still rather inactive. Best white-clover comb honey would bring on arrival 13 to 14 cents, and sells in a wholesale way at 15 to 16½. Best extracted wholesales at 9½. For beeswax I offer 30 cts. in cash or 32 in exchange for bee-supplies.

March 26.

E. W. PEIRCE,
Zanesville, O.

\$33⁵⁰ AND UP

Only Galloway

"BATH IN OIL"

High Grade Separator—Direct
Save \$25 to \$50 direct at my factory price—freight prepaid. Get the only Separator that runs in "Bath of Oil," like a \$5,000 automobile. This alone is worth \$50 extra, but costs you nothing extra.

Take 90 Days'

Farm Test—Freight Prepaid
Why pay \$85 to \$110 to dealers or agents who cannot sell you a separator equal to the Galloway—closest skimmer—easiest run—easiest cleaned—10-yr. guarantee. Send for **BOOK FREE** WM. GALLOWAY CO.
1633 Galloway St., Waterloo, Ia.

200
to
900
lbs.
capac-
ity.

BEE SUCCESSFUL

Fit out your apiary with **Muth Special Dovetailed Hives**. They are made with warp-proof covers and warp-proof bottom-boards. Besides, each hive has a honey board into which may be placed a Porter bee-escape, thus enabling the bee-keeper to *take off honey without a sting*. Good bee-keepers use them exclusively. They are sold at the same price as the regular styles of dovetailed hives. Send for our catalog to-day. 'Tis free.

THE FRED W. MUTH CO.

51 WALNUT STREET

THE BUSY BEE-MEN

CINCINNATI, OHIO

Our Muth Ideal bee-veil, 75c postpaid, is the *best veil* made, so they all say.

Extracted Honey Wanted

We are always in the
market.

If you have any to sell, mail
small average sample to

**NATIONAL
BISCUIT COMPANY**

Purchasing Department,
Washington Bvd. & Morgan St.
CHICAGO, ILL.

WE WILL BUY AND SELL HONEY

of the different grades and kinds

If you have any to dispose of, or if you
intend to buy, correspond with us.

We are always in the market for WAX
at highest market prices.

HILDRETH & SEGELKEN

265-267 Greenwich St., 62-66 Murray St.
NEW YORK

WEST VIRGINIA and OHIO BEE-KEEPERS

and those more distantly located can save
time and freight by ordering their supplies
from

ZANESVILLE

the great shipping-center of the North Cen-
tral States.

"ROOT QUALITY, PEIRCE SERVICE."

EDMUND W. PEIRCE, Zanesville, O.

BEE SUPPLIES

We have a new stock of goods on hand for 1909 and are
able to fill your orders, *without delay*, at factory prices.

SO send a list of the supplies you need, and we will be glad to
quote you our best prices.

DO IT NOW and secure our **Special Early-order Discounts.**
If you care to save on freight charges, send your orders to us.
No charges for drayage.

C. H. W. WEBER

HEADQUARTERS FOR ROOT'S GOODS

Office and salesroom 2146-48 Central Av.

CINCINNATI, OHIO

NOTICE.—On account of the death of my father, Mr. C. H. W. Weber, it is necessary to make it understood that the business
will be conducted the same as usual; there will be no change whatever. Soliciting your patronage, I am
Yours truly, CHAS. H. WEBER.

GLEANINGS IN BEE CULTURE

E. R. ROOT
Editor

A. I. ROOT
Editor Home Department

H. H. ROOT
Assistant Editor

J. T. CALVERT
Business Manager

Department Editors:—Dr. C. C. Miller, Prof. A. J. Cook, J. E. Crane, "Stenog," Louis H. Scholl, Wesley Foster, G. M. Doolittle, R. F. Holtermann, W. K. Morrison.

\$1.00 per year. When paid in advance: 2 years, \$1.50; 3 years, \$2.00; 5 years, \$3.00

POSTAGE IS PREPAID by the publishers for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. Canadian postage is 30c per year. For all other countries in the Postal Union add 60 cents per year postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. The notice should be sent two weeks before the change is to take effect.

DISCONTINUANCES. We give notice just before expiration, and further notice if the first is not heeded, before discontinuing. Subscribers are urged to renew promptly in order to avoid interruption in receipt of GLEANINGS; or, if unable to make payment at once, to advise us when they can do so, which will be considered as an order to continue. Any one wishing his subscription discontinued should so advise us upon receipt of expiration notice and he will not be annoyed by further notices.

HOW TO REMIT. Remittances should be sent by Draft on New York, Express-order or Money-order, payable to order of The A. I. Root Company, Medina, Ohio. Currency should be sent by registered letter.

AGENTS. Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

FOREIGN SUBSCRIPTION AGENTS

Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents, at the prices shown:

PARIS, FRANCE. E. Bondonneau, 56 & 58 Ave. Felix Faure, Paris 15. *Per year, postpaid, 7½ fr.*

GOODNA, QUEENSLAND. H. L. Jones. Any Australian subscriber can order of Mr. Jones. *Per year, postpaid, 6/.*

DUNEDIN, NEW ZEALAND. Alliance Box Co., 24 Castle St. *Per year, postpaid, 6/.*

CONTENTS FOR APRIL 1, 1909

EDITORIAL	187	Skunk Cabbage Illustrated	200
Death of E. L. Pratt	187	Parade of Products in California	201
Artificial Pasturage that Pays	187	Sheds for Apiaries	201
Bulletin on Bee Diseases	187	Bees on a Woodshed	203
Status of Apiculture	188	Paper Bottles for Extracted Honey	203
STRAY STRAWS	190	Clover Prospects in Northern Ohio	204
Honey, Cost of	190	Wire-cloth Separators	205
BEE-KEEPING AMONG THE ROCKIES	191	Catalpas in Oklahoma	206
Unprofitable Methods	191	Sorter's Honey-case	206
Shipping-cases Discussed	191	Hive-cart with Pneumatic Tires	207
NOTES FROM CANADA	192	Double-tier Shipping-cases	208
Cans, Second-hand	192	Buckwheat Cakes, to Make	208
Foul Brood Illustrated	192	Prices of Honey	209
Adulterated Honey	192	Hive, Hurst's Reversible	210
Dr. Wiley	192, 193	Instructions for Beginners	211
Clover Killed by Drouth	192	HEADS OF GRAIN	212
Honey from Wild Mustard	192	Sealed Covers v. Cushions	212
GLEANINGS FROM OUR EXCHANGES	193	Moving Bees Short Distances in Winter	212
Plural Queens in Europe	193	Wintering in a Warm Room	212
Bees, Number of in Holland	193	Bokhara Clover	212
Beet and Cane Sugar	193	OUR HOMES	213
CONVERSATIONS WITH DOOLITTLE	194	Anti-saloon League Report	214
Overstocking	194	Jug of Whisky for Christmas Present	214
Distance Bees Fly	194	POULTRY DEPARTMENT	215
GENERAL CORRESPONDENCE	195	Marketing Eggs in Florida	215
Williams System of Management	195	Making Hens Lay	216
Shaking Bees	195, 196	Testing Eggs	216
Prospects for White Clover	196	Mites, Remedies for	217
Alsike Clover	198	Deep-litter Feeding of Chickens	217
Shipping Honey Sight Draft	199	Secrets, Selling	217

BEES FOR SALE

I have 100 colonies of bees here at Flint, and there are reasons why I prefer to begin the season with a smaller number.

At some of our Northern Michigan Apiaries the fire last fall totally destroyed the pasturage.

For these reasons I wish to sell some bees. They are mostly in ten-frame Langstroth hives, although a few are in eight-frame hives. The hives are all new, made of soft white pine, and painted with two coats of white paint. Nearly all of the combs are built from wired foundation. The bees are all pure Italians, and mostly of the Superior stock, or Moore strain. Every thing is strictly first class—could not be better.

Prices for ten-frame colonies are as follows: Less than five colonies, \$7.00 per colony; five colonies or more, but less than ten, \$6.50 per colony; ten or more colonies, \$6.00 each.

Eight-frame colonies: Less than five, \$6.00 each; five colonies or more, but less than ten, \$5.50 each; ten or more colonies, \$5.00 each. This is the first time I have made any lower prices on large orders.

The bees will be shipped by express in May, about fruit-blooming time, and safe arrival in perfect condition guaranteed.

W. Z. HUTCHINSON, Flint, Mich.

LOCATION, STOCK, PRICE

We are more centrally located, have the advantage of being able to ship direct over THIRTY different RAILROADS and STEAMBOATS, and as we always carry several carloads of

ROOT'S SUPERIOR BEE-SUPPLIES

in stock, we are, therefore, in position to furnish the best bee-goods at the very lowest prices. *This month* we can quote a SPECIAL CASH PRICE, if you will send us a list of your requirements, either for immediate or future delivery.

BEESWAX

We will buy all you can ship us, at market prices for cash or in trade. Write us to-day.

If interested in poultry, write for catalog No. 8.

BLANKE & HAUKE SUPPLY CO.
1009-11-13 Lucas Ave. ST. LOUIS, MO.

WESTERN PENNSYLVANIA, WEST VIRGINIA,
and EASTERN OHIO

BEE-KEEPERS

You can get any thing you want for bees, at

STAPLER'S SEED STORE

412-414 Ferry St., PITTSBURG, PA.
Agents for Root's goods.

Mr. Bee-Man:

You can save time, worry, and money by ordering your supplies for next season now. I have a full line of Hives, Supers, Sections, Foundation—in fact, every thing you need in the apiary. If you do not have a catalog, send for one to-day.

182 **H. H. JEPSON** Boston,
Friend St. Phone Haymarket 1489-1 Mass.

Golden Queens

I breed nothing but GOLDENS, by the best-known methods.

1 6 12
85c \$4.80 \$9

M. BATES, Greenville, Ala., Rt. 4.

Mr. Have you sent me your list of goods wanted, for best price? I have the goods—quantity and quality.

I buy car lots and sell in any quantity. Quality will suit, and prices will make your pocket-book smile. If you are in it, write at once. Catalog free. Bees for sale. H. S. DUBY, ST. ANNE, ILL.

GLEANINGS IN BEE CULTURE

Devoted to Bees, Honey, and Home Interests

Established 1873

Circulation 35,000

72 pages Semi-monthly

A. L. BOYDEN, Advertising Manager

ADVERTISING RATES

Twenty-five cents per agate line, flat. Fourteen lines to inch.
SPACE RATES. To be used in one issue. One-fourth page, \$12.50; one-half page, \$25.00; one page, \$50.00.
 Preferred position, inside pages, 30 per cent additional.
 Preferred position, inside cover, 50 per cent additional.
 Outside cover page, double price.
 Reading notices, 50 per cent additional.
 Cash-in-advance discount, 5 per cent.
 Cash discount if paid in 10 days, 2 per cent.
 Bills payable monthly.
 No medical or objectionable advertising accepted.
 Column width, 2 $\frac{3}{4}$ inches.
 Column length, 8 inches.
 Columns to page, 2. (Regular magazine page.)
 Forms close 10th and 25th.
 Address Advertising Department, Gleanings in Bee Culture, Medina, Ohio.

INDEX TO ADVERTISEMENTS

Agricultural Impl's.	Case, J. B. 10	Fencing.	Poultry-supplies.
Bateman Mfg. Co. 19	Doolittle & Clark. 11	Amer. Steel and Wire Co. 17	Berry's Poultry Farm. 23
Galloway Co. 26	Fluharty, C. O. 11	Anchor Fence Mfg. Co. 18	Brenner, J. J. 23
Potato Implement Co. 21	Hand, J. E. 10	Anthony Fence Co. 18	Greider, B. H. 23
	Hutchinson, W. Z. 5	Colled Spring Wire. 18	
Baby Chicks.	Laws, W. H. 11	Kitselman Brothers. 18	Publications.
Blum & Co. 22	Littlefield, W. J. 10		American Bee Journal. 13
	Pharr, J. W. 10		Bee-keepers' Review. 5
Banking by Mail.	Quirin. 11		Inland Poultry Journal. 23
Savings Deposit Bank. 25	Shaffer, H. 11	Gas-engines.	
	Shuff, W. A. 10	Galloway Co. 22	
Bee-supplies.	Sires, Virgil, & Brother. 11	White Lily Co. 19	Railroads.
Blank & Hauk. 5	Taylor & Son. 11		Pere Marquette. 24
Cary, W. W., & Son. 12	Wardell, F. J. 10		Seaboard Air Line. 24
Dadant & Sons. 32		Honey-dealers.	
Duby, H. S. 5	Berry-boxes.	Hildreth & Segelken. 3	Roofing.
Falconer, W. T. 9	Aultfather, H. H. 20	Muth Co., F. W. 2	Anderson Mfg. Co. 19
Graffam, G. S. 10	New Albany Box, etc. 20	National Biscuit Co. 3	Breese Brothers Co. 32
Griggs Bros. & Nichols. 7	Bicycles.	Household Special's.	Standard Paint Co., cover.
Hilton, Geo. E. 13	Mead Cycle Co. 20	Best Light Co. 24	United Factories Co. 19, 20
Howkins & Rush. 12	Books.	Incubators.	Seedsman.
Hunt & Son, M. H. 7	System Co. 25	Belle City Incubator Co. 23	Baines, Ella V. 21
Jenkins, J. M. 12	Buggies, etc.	Prairie State Incu. Co. 23	Binghamton Seed Co. 21
Jepson, H. H. 14	Columbus Carriage Co. 24	Reliable Incubator Co. 22	Germain Seed and P't Co. 21
Leahy Mfg. Co. 5	Elkhart Car. & Har. Co. 22	Wisconsin Incubator Co. 23	Park, G. W. 20
Minnesota Bee Sup'y Co. 30	Galloway Co., Wm. 29		Stapler. 5
Muth, Fred W. 2	McIntyre, W. H. 20	Land for Sale.	Wallin, W. B. 13
Nebel, J. & Son. 14	Ohio Carriage Mfg. Co. 22	Howe, E. C. 24	Sprayers and Pumps.
Nysegwander, Joseph. 3		Moeller, H. F. 24	Brown Co., E. C. 20
Peirce, E. W. 3	Classified Ad's.	Seaboard Air Line. 24	Crestline Mfg. Co. 21
Pilcher & Palmer. 14	Bees and Queens. 27	Mail-order Houses.	Deming Co. 26
Pouder, Walter S. 16	Bee-keepers' Directory. 28	Chicago House Wr. Co. 1	Rochester Spr.-pump Co. 18
Rawlings Implement Co. 30	For Sale. 27	Gordon-Van Tine, cover.	Squabs.
Rea Bee and Honey Co. 30	Help Wanted. 26		Melrose Squab Co. 23
Root Co., Syracuse. 3	Honey and Wax Wanted. 26	Manure-spreaders.	Stoves and Ranges.
Soper, W. D. 13	Honey and Wax for Sale. 26	Galloway Co., W. 29	Kalamazoo Stove Co. 19
Stapler's Seedstore. 13	Monogram Stationery. 26	Miscellaneous.	Tools.
Stringham, I. J. 12	Poultry. 28	Am. Col. of Dressmaking. 29	Iwan Brothers. 21
Texas Seed and Flo'r Co. 13	Real Estate. 26	Mugler Engraving Co. 20	Typewriters
Toepferwein & Mayfield. 8	Situations Wanted. 26		Oliver Typewriter Co. 25
Weber, C. H. W. 3	Souvenir Post Cards. 26	Mushrooms.	Wagons.
Woodman, A. G. 15	Stamp Collections. 26	Jackson Mush. Farm. 21	Electric Wheel Co. 19
Bee-smokers.	Wants and Exchanges. 26	Nurserymen.	Empire Company. 19
Danzenbaker, F. 13	Comb Foundation.	Gardner Nursery Co. 21	
Bees and Queens.	Dadant & Sons. 32	Roesch, Louis. 21	
Bates, M. 5	Cream-separators.		
Benton, Frank. 10	Galloway Co. 2		

1 The Root Dovetailed Hive.**2 The Danz. Hive—**

The comb-honey hive.

3 The Root Chaff Hive—

Our all-the-year-around-out-door hive.—Costs more and is worth more.

4 All other Supplies

used or needed in the apiary—and all "Root Quality."

5 Material and Workmanship

of the very best—yet reasonable in price.

Write us for prices on quantities, according to your needs, either f. o. b. Lansing, or delivered to your station. Send for our 1909 catalog. :: Beeswax wanted.

M. H. HUNT & SON

Opposite Lake Shore Depot.

LANSING, MICH.

Bee Supplies

Our new stock has arrived; all orders are shipped promptly.

Do you know, Mr. Bee Man, that our business increases each year from 25 to 50 per cent?

Why? Because we are saving our customers money in freight.

Why not allow us to save for you? Send us your orders and try us.

Satisfaction Guaranteed.

Honey in cans or barrels, also beeswax, wanted in exchange for supplies. Write us what you have to offer, and let us tell you what we can do.

No cartage on Honey or Beeswax in or Supplies out.

Free catalog for the asking.

The Griggs Bros. Co.,
Toledo, Ohio.

PUBLICATIONS ON BEE CULTURE

Please use this order form by checking in the margin the items wanted

The pamphlets and booklets listed below are of more than ordinary interest:

- ☐ **My First Season's Experience with the Honey-bee.** By the "Spectator," of the *Outlook*, of New York. A ten-page leaflet detailing the experiences of this well-known writer. You will read the leaflet through before you lay it down. Free.
- ☐ **The Bee-keeper and Fruit-grower.** A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee-keeping may be doubly profitable to the fruit-grower. Fruit-growers are realizing as never before the necessity of having honey-bees in close proximity to their blossoming fruit. Free.
- ☐ **Bee-keeping for Sedentary Folk.** A 24-page leaflet reciting the actual experiences of an amateur bee-keeper, showing what equipment is best, points derived, etc. Free.
- ☐ **Catalog of Bee-keepers' Supplies.** Our complete catalog will be mailed free to any address on request.
- ☐ **Transferring Bees.** A 14-page booklet giving instructions and illustrating appliances. No need to keep your bees in old out-of-date hives when they can easily be transferred into new hives and earn profits for you. Price 10 cts.
- ☐ **Bee-hunting.** Gives information necessary to enable one who is active and intelligent to engage in bee-hunting with success. It is well gotten up and worth the price, which is 25 cents.
- ☐ **Spring Management of Bees.** A 14-page booklet detailing the experiences of some successful bee-keepers, and giving instructions on this oftentimes perplexing matter. Price 10 cts.
- ☐ **Habits of the Honey-bee.** By Dr. E. F. Phillips. A somewhat scientific handling of the habits and anatomy of the bee. Price 10 cents.
- ☐ **How to Keep Bees.** A book of 228 pages, detailing in a most interesting manner the experiences of a beginner in such a way as to help other beginners. Price \$1.10 postpaid.
- ☐ **The A B C of Bee Culture.** A complete encyclopedia on bees, of nearly 540 pages, fully illustrated. \$1.50 postpaid; half leather, \$2.00.
- ☐ **Gleanings in Bee Culture.** A 64-page illustrated semi-monthly magazine, the leading exponent of bee culture in this country. Ten cents per issue, but to new subscribers we will furnish it six months for 25 cents.

This sheet may be used as an order sheet by properly checking on the margin your signature, and remittance, if required.

The A. I. Root Co., Medina, O.:

Please send me the items checked above; I inclose \$. to cover the cost.

Name.....

Street Address or R. F. D.....

Town.....

G.B.C. 4-1.

State.....

New Goods for 1909



Good News for the Southwestern Bee-keeper

The strenuous season of 1908 left our stock of bee-supplies in a depleted condition. We have now replenished our stock with large shipments of the finest bee-goods ever seen in the Southwest. These are

Root's Goods Exclusively

We have not dared to experiment with any other line of bee-supplies; and from the looks of our new goods we shall never need to. They are "as fine as silk." We should be glad if our customers would come and see them. You will be pleased with the best ever. Come along and enjoy a day in San Antonio, picking out what you want while your wife goes shopping. Seeing is believing, and we would far rather hear you puff our goods than do it ourselves. But we honestly believe we have not only the largest line of bee-supplies in Texas, but also, by far, the best in quality.

Shipping-cases for Comb Honey.

500	12	4	3 and 2 in. glass.	350	6¼	3	2 and 3 in glass.
350	10	4	2-in. "	550	7½	4	3-in. "
200	12	2	2-in. "	250	7½	3	3-in. "
200	16	2	2-in. "	300	9¼	4	3-in. "
250	8	3	2-in. "	50	9¼	3	3-in. "

If you can use any of the cases in the foregoing list we will quote very attractive prices to clean them up. Please write at once if you want any.

Early-order discount—1 per cent for March.

Beeswax Wanted.

We are in fine shape to use large supplies of beeswax. Bee-keepers in Texas, Mexico, New Mexico, Arizona, Oklahoma, and Louisiana should bear this in mind. In our foundation department we have a force of expert workmen who thoroughly understand their work. In working the beeswax they are careful to retain the original fragrant odor of the hive. It takes skill and care to do this, but we do it. If you desire *your* beeswax worked up in this way send it here. We buy wax outright for cash, and we also do considerable trading for bee-supplies.

Toepperwein & Mayfield

1322 South Flores St.

San Antonio, Texas

Write to us
your wants.

Catalog
free.

COMB FOUNDATION and SECTIONS

'Falcon' brand

The name of our famous line of bee-keepers' supplies which for nearly thirty years has been noted for that fine workmanship and material which have forced others to make a better grade of goods. **NONE ARE OUR EQUALS YET!**

Our workmen, who have learned the making of our brand of bee-goods, are still with us, and our customers are assured of that high grade of excellence which we have maintained in the past.

Our Foundation

"Falcon" foundation has won a reputation on account of its perfect manufacture, its cleanness, toughness, and the readiness with which bees accept it. No acid or other injurious substances which destroy the "life" of foundation are used in our special process. We clarify the best grades of pure beeswax, and by our process of sheeting subject it to enormous pressure until it finally passes through perfect foundation-mills, and is cut, papered, and boxed, ready for shipment. **SAMPLE FREE.** Every pound equal to samples. Write for prices. Highest price, cash or trade, paid for Beeswax.

Sections

We were the first to produce a polished section, and we have yet to see any sections equal to ours. Our special machines for sanding and polishing sections give bright, smooth, polished sections which can not be equaled. We use only selected basswood, the white part of the timber only being used. We furnish all styles of sections and supers for the same at one uniform price for beeway and one for plain. Write for prices and our catalog of supplies.

Air-spaced Hives

For northern localities there is no better hive for out-of-door wintering than the air-spaced, and it is just as convenient for summer management. An air space is the least conductor of sudden changes in temperature, and our Air-spaced Hives have given perfect satisfaction in the hands of practical bee-keepers in the North everywhere. The air-chamber may be filled with chaff if one desires. The same frames, supers, covers, and other fixtures are used as with the Dovetailed hives.

PRICE OF AIR-SPACED HIVES

8-frame, 1½-story, complete for comb honey, in flat, 1, \$2 80; 5, \$12.50
10- " 1½- " " " " " " " 1, 2.85; 5, 13.25

Air-spaced hives are cheaper than chaff-packed hives or than Dovetailed hives with winter cases, and are much less trouble, as bees do not have to be packed in fall and unpacked in spring.

We have on press a booklet for beginners, "Simplified Bee-keeping," and a circular of Beginners' Outfits. These give complete instructions for the beginner, and we shall be pleased to place on our list the names of all who request them; and as soon as printed, copies will be mailed free.

W. T. FALCONER MFG. CO., Jamestown, N. Y.

J. E. HAND will begin the season of 1909 with improved facilities for rearing the

CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some *valuable improvements* of his own—in short, a system through which the highest queen development is reached by *correct and scientific* principles, which means that he is now in position to offer to the bee-keeping public a *higher class of queens than has ever before been offered* by any breeder, owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an *improved method of classifying queens* which strikes the word *select* from our list, and gives a *square deal to all*. No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy northern-bred red-clover Italians, "the very best," and will be safely delivered to any address in the United States, Cuba, Canada, or Mexico, at the following prices: Untested, \$1.25; 3, \$3.00; warranted, \$1.50; 3, \$4.00; tested, \$2.00; 3, \$5.00. Book orders now, send money when queens are wanted. Valuable information free. Send for it to-day.

J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.

LONG-TONGUED RED-CLOVER BEES.

This is their Headquarters.

I am the Man who Originated them.

**F. J. WARDELL,
Uhrichsville, O.**

This strain of bees undoubtedly excels all others in honey-gathering qualities. There is certainly none better at any price. They are handsome, too, as my testimonials will show. Read what a well-known lawyer from San Antonio, Texas, says about my queens:

San Antonio, Texas, Jan. 20, 1909.

F. J. WARDELL, Uhrichsville, O.

Dear Sir:—The select breeding queen ordered from you about the 20th of last September was such a beauty, and gave such prompt results, that I immediately ordered others. I am well pleased, and expect to do further business with you.

Very truly yours, LOUIS MAVERICK.

If you will favor me with an order for queens I expect to treat you in the same way so as to get further orders. I have many more testimonials of a like character, and *will please you also* should you intrust me with your orders. No poor indifferent queens at any price will be sent out. None but the best grade of pure Italian stock.

Write me now, stating what you want for next season. If you require a good breeding queen I have some that will suit in every way. Send for circular.

	April and May.	June to Oct.
Untested.....	\$1.25	\$1.00
Select untested	1.50	1.25
Tested	2.50	2.00
Select tested.....	3.50	3.00
Breeding queens.....	5.00	3.50
Select breeding queens	9.00	7.50
Extra-select breeding queens	12.00	10.00

Please send for my circular. My address is

F. J. WARDELL, . UHRICHSVILLE, OHIO

PHARR'S GOLDENS

took first prize at three exhibits in 1907. We also breed Carniolans, three-banded Italians, and Caucasians, bred in separate yards and from the best breeders obtainable, guarantee safe delivery and fair treatment. Untested, \$1; tested, \$1.25. Address New Century Queen-rearing Co., Berclair, Tex. John W. Pharr, Prop

Golden ^{5-band and 3-band} Red-clover Italian Queens

My queens are large and prolific. Their workers are hardy and good honey-gatherers. Give them a trial. Untested, one, \$1.00; six, \$5.00. Select untested, one, \$1.25; six, \$6.50. Select tested, \$2.00 each. I am booking orders now to be filled in rotation after May 25.

No nuclei or colonies for sale this season.

WM. A. SHUFF, 4426 Osage Ave., Phila., Pa.

Carniolan, Banat, and Caucasian Queens

Imported, \$5.00 each; homebred, \$1.00 each, five for \$4.00. Best strains from apiaries personally inspected by

FRANK BENTON, box 17, Washington, D. C.

Golden Italian ^{\$1} QUEENS

Same old stand and stock. Ready now.

J. B. CASE, . PORT ORANGE, FLA.

Not Cheap Queens, but Queens Cheap

DON'T BUY QUEENS UNTIL YOU SEE MY
FREE OFFER

Red-clover three-band queens as follows: Untested, 1, 75c; 6, \$4.20; tested, 1, \$1.00; 6, \$5.70; select breeder, \$5.00
Nuclei with untested queen, one-frame, \$1.75; two-frame, \$2.25; with tested queen, one-frame, \$2.00; two-frame, \$2.50.
Five-band or golden queens as follows: Untested, 1, \$1.00; 6, \$5.70; tested, 1, \$1.50; 6, \$8.70. Breeders, 1, \$10.00.
If queens are wanted in large quantity, write for prices.
Directions for building up weak colonies, 10 cts.

W. J. LITTLEFIELD, LITTLE ROCK, ARK., RT. 3.

WE ARE SITUATED

at the most central shipping-point in Northern New England, and with our general bee and honey business are best fitted to serve the bee-keepers of Maine, Vermont, and New Hampshire. Our supply department is stocked with a full line of

ROOT'S GOODS EXCLUSIVELY

and we can please you. Our catalog and circulars are free.

Our address is **CEO. S. CRAFFAM & BRO.**
WAREHOUSE, 105 Third Street,
OFFICE, 47 Main Street, BANGOR, MAINE.

QUEENS

and bees. Nothing but Italians; an improved superior strain is what **Quirin-the-Queen-Breeder** raises. Stock is northern bred and hardy. A year ago we wintered our five yards on summer stands without a single loss; so far this winter we have lost but three colonies (due to mice and a bad entrance). A party in the West writes that he is one of the largest honey-producers of his State, and says that his success is largely due to our stock, and asks for prices on 1000 queens. Some of the largest yields reported can be traced to our stock. Over 20 years a breeder. Remember, queen-rearing is not a side issue with us, but it's our only business, and on a large scale.

FREE CIRCULAR AND TESTIMONIALS.

PRICES OF QUEENS BEFORE JULY.	1	6	12
Select queens	\$1 00	\$5 00	\$9 00
Tested queens	1 50	8 00	15 00
Select tested queens	2 00	10 00	18 00
Breeders	4 00		
Golden five-band breeders	6 00		
Two-comb nuclei, no queen	2 50	14 00	25 00
Three-comb nuclei, no queen	3 50	20 00	35 00
Full colonies on eight frames	6 00	30 00	

Untested queens in April will be mailed from the South.

Add the price of whatever grade of queen is wanted, with nuclei or colonies; nuclei ready about May 1st to 10th; can furnish bees on Danzenbaker or L. frames; pure mating and safe arrival guaranteed. We employ 400 to 500 swarms in queen-rearing, and expect to keep 500 to 1000 queens on hand ready to mail. Our Northern-bred bees are hardy, yet gentle; they will give you results. Address all orders to

QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio



Chas. Oscar Elmhart, New Martinsville, W. Va.

Book orders now as I fill in rotation. All inquiries gladly answered. Untested, \$1.00; tested, \$2.00 (guaranteed to produce goldens); select breeders, \$6.00. Clover queens, \$1.00. All stock pure Italian, very gentle.

DOOLITTLE & CLARK

have a nice lot of Italian breeding queens that they have wintered, which will be ready for delivery May 1. Send for circular.
BORODINO ONONDAGA CO., N. Y.

Taylor's Queens for 1909

J. W. Taylor & Son have made a specialty of breeding for the best honey-gatherers. Our three-banded Italians can't be beat, or haven't been, as honey-gatherers. Untested, \$1.00 each, or \$9.00 a dozen; tested queens, \$1.25 each, or \$12.00 a dozen. Select tested queens, \$1.50 each; breeders, the very best, \$3.00 to \$5.00 each. Send all orders to
J. W. TAYLOR & SON, BEEVILLE, BEE COUNTY, TEXAS

W.H. Laws

is again on hand with his famous stock of bees and queens for the season of 1909. Fine well-bred queens are his specialty; and in all the queens mailed during the past 18 years there is not a displeased customer that I know of. On the other hand, letters of praise come from every source. Mr. Wm. Hughes, of Washington, D. C., writes that he has been handling queens for the past twenty years, and he has never found any that equal or please him so well as the two dozen he bought of me last season. I can and do mail queens every month in the year, California and Cuba taking over 100 in the past month of December. I will mail queens from now on at the one price of \$1.00 each or 6 for \$5.00. Breeding queens, each, \$5.00. Write for prices on quantity lots. Address
W. H. LAWS, Beeville, Bee County, Texas.

Westwood Red clover Queens

A New York customer writes, "I have tried queens from a good many breeders, but yours are far ahead of them all." Nuclei and full colonies a specialty. Price list on application.
HENRY SHAFFER, 2860 Harrison Ave., Sta. L. Cincinnati, O.



Queens of High Quality

Beautiful Goldens and Superior Red-clover Italians

Bred for Business

We are fortunate in securing the services of a queen specialist of national reputation, who will have charge of our queen-rearing department. Our queens will be bred by the most up-to-date methods from the very best stock obtainable. One thousand colonies back of our business will enable us to furnish queens in large or small quantities by return mail.

Either three-banded Italians or goldens by return mail.

Select untested	one, \$1.00	six, \$5.50	doz., \$9.00
Tested	1.50	8.00	11.50
Select tested	2.00	9.00	16.00
Breeders, \$3.00 to \$5.00. Straight golden breeders, \$10.00			

DESCRIPTIVE CIRCULAR FREE.

SIRES BROTHERS & CO.

Yakima Apiaris 516 North 8th St., North Yakima, Wash.

NEW ENGLAND BEE-KEEPERS

We are
headquarters for

Bee-supplies.

We have a large stock of hives, supers, sections, and foundation on hand, and can supply your wants promptly. The bee-keepers who had their supers ready for the honey-flow last season, secured a good harvest. Send in your orders early and have goods shipped by freight. Price list free.

Bees and Queens.

W.W.CARY & SON
LYONSVILLE, MASS.

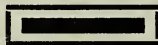
Field and Garden Seeds Bee and Poultry Supplies

The best quality bee-supplies. None better to be had. Now is the time to send in orders, and be ready for the rush season.

All kinds of Garden and Field Seeds. Choice sweet-clover seed always in stock. A large variety of best seeds for the South.

Bee-keepers and gardeners who also raise poultry will be interested in our large stock of poultry-supplies, the largest and most complete line in the South.

Catalogs of all of the above lines on request. Send now, and get your orders in early. .



Texas Seed and Floral Company
Dallas, Texas

Bee Supplies

for the Southern
States.

WE are better prepared than ever before to take prompt care of all orders. We sell goods at factory prices and aim to keep our stocks well assorted. Write us for estimates on your list, or send the order right along and we will guarantee that you will be satisfied. We handle none but the best goods. Golden bees and queens a specialty. Send in your orders now and be sure of early delivery.

Root's goods exclusively.

HOWKINS & RUSH
241 Bull St. SAVANNAH, GA.

For 25 Years

I have supplied Southern Beekeepers
with

HIVES and SUPPLIES

and have given satisfaction.

Root's Goods Exclusively.

Prompt and accurate service.
Catalog mailed free.

J. M. JENKINS
WETUMPKA, ALABAMA

THEY ARE HERE.

The Best and Largest Stock of Root's Goods
Ever in Western Michigan.

As I was able to clear up my stock closely last season, every thing is new. Danz. and all Dovetailed hives with the $\frac{7}{8}$ bottom-boards. Shipping-cases with the corrugated paper. The newest design of extractors. In fact, every thing fresh from the factory, and of latest design.

SEND ME A LIST OF YOUR WANTS
AND LET ME MAKE YOU FIGURES

The goods are here, my time is yours,
and I want to serve you.

I can still take a few more orders for my strain of bees and nuclei. See ad. in back numbers. And I want beeswax, for which I will pay cash or 3c above cash prices in exchange for goods. Send for my 1909 catalog (48 pages), free.

GEORGE E. HILTON
FREMONT, MICH.

I. J. STRINGHAM
105 PARK PL.

New York City

furnishes bees, and every kind of material bee-keepers use.
1909 catalog ready. Liberal discount on early orders.

Apiaries: . Glen Cove, L. I.

IMPROVED DAN-ZE GUARANTEED 'ALL RIGHT'

GOLD MEDALS

St. Louis - 1904
Jamestown - 1907



IS THE BEST.
STRONGEST,
COOLEST,
CLEANEST,
CHEAPEST,
and LARGEST
SMOKER SOLD
FOR A DOLLAR.

With the side grate combines hot and cold blast deflecting part of the air back and over the fuel; **COOLS** as it expels the smoke, while part fans the side and bottom till all consumed. The Double-walled case, $3\frac{1}{2}$ inches in diameter, has asbestos-lined sides and bottom, keeping all cool.

The projecting hinge-strap protects the smoke exit, and renders easy opening the one-piece cap.

THE VALVELESS metal-bound bellows combines simplicity, utility, and durability.

Five years increasing sales justify us in extending our **GUARANTEE OF PERSONAL RESPONSIBILITY** for full satisfaction or **REFUND** of price on all our smokers sold by **US OR OTHERS**.

Price, \$1.00; two, \$1.60; mail 25c each extra.

DAN-ZE HIVES with metal **Propolis-proof Guards**.

ROOT'S GOODS at Root's prices, early-order discounts.

Write us for **any thing** you need. Free circulars for yourself and your friends.

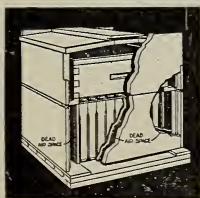
If you want a home in this genial Sunny South Land, we will help you find it.

F. Danzenbaker, Norfolk, Va., or Medina, Ohio

Yellow and White Sweet-clover Seed for Sale

Yellow blooms three or four weeks earlier than white. One of the best bee-foods to be found.

W. B. WALLIN, Brooksville, Ky.



Protection Hive.

The best and lowest-price double-wall hive on the market. It will pay to investigate. 1909 catalog now ready. Send for one and let us figure on your wants. Beeswax wanted.

A. G. WOODMAN CO., . Grand Rapids, Mich.

This Coupon Worth 35 cents

(New Subscribers Only)

Name

Postoffice

State

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

AMERICAN BEE JOURNAL

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

It Will Increase Your Honey-Money

If you will send us your name and address with 40 cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

American Bee Journal, 118 West Jackson, Chicago, Illinois

Oldest Bee-paper in America

Now in its 48th Year

Selling 20,000 Pounds of Extracted Honey at Three Cents per lb. above the Market Price

We count ourselves fortunate in securing for GLEANINGS IN BEE CULTURE an article from W. Z. Hutchinson, a prominent honey-producer, giving a detailed account of the methods by which he has accomplished the result above indicated. This article is one of the most important that we have been able to give to the readers of GLEANINGS in years, and is exceptionally valuable, for its methods and recommendations are applicable to large and small producers of either comb or extracted honey, and there is scarcely a reader of GLEANINGS who will not be both interested and profited by it.

The article is intensely practical. There are no intricate methods described. There are no plans which can not be carried out by any bee-keeper, and we do not hesitate to say that a careful following of these methods will bring to the readers of GLEANINGS IN BEE CULTURE

THOUSANDS OF DOLLARS

The writer, already well known to our readers, outlines his work as follows:

- (1) Finding the right customers, the first step.
- (2) Importance of the right kind of advertising.
- (3) Getting pay for samples.
- (4) Education of new customers.
- (5) Description of the circulars used.
- (6) Larger profits in following this method.
- (7) Opportunities for other bee-keepers.

In addition to the carefully worded description, very plain and simple however, the article will be fully illustrated by many choice half-tones and other engravings, and the same will appear in an early issue. Subscriptions should be sent in at once to secure the number containing this article.

SPECIAL OFFER

Send in your order now, on the attached coupon, for a year's subscription to GLEANINGS IN BEE CULTURE at \$1.00, and with it we will send absolutely free one copy of "A Year's Work in an Out-Apiary," described on page 31.

THE A. I. ROOT COMPANY, Medina, Ohio.

The A. I. Root Co., Medina, Ohio.

For the enclosed \$1.00 enter my name for a year's subscription to GLEANINGS and send me a copy of "A Year's Work" free, as per your special offer.

NAME

ADDRESS

TOWN

STATE

Established 1884

ALWAYS ON TOP

WITH A
FULL LINE OF

Bee-keepers' Supplies

We can please you with quick shipments and satisfactory service. Our goods are the ROOT CO.'S make, hence there is nothing to fear as to quality. A postal-card will bring you our 50-page catalog. Send us your inquiries at once. We equalize freight rates with St. Louis and Kansas City points on all shipments of 100 lbs. and over. We sell at retail and wholesale, according to quantity.

John Nebel & Son
Supply Co. High Hill, Montg. Co., Mo.

Bee Supply House

Everything for Bees

We manufacture the latest approved supplies and sell direct at factory prices. We're old-time bee people in a bee country. We know your needs. Early order discounts. Send for catalog. Don't buy till it comes.

LEAHY MANUFACTURING CO.

10 Mainage St., Higginsville, Mo.

1699 South 13th St., Omaha, Neb.

Also E. T. Flanagan & Sons, Box 2, Belleville, Ill.



WAKE UP!

THE BEES WILL CATCH YOU NAPPING

IF
YOU
DON'T
WATCH
OUT.

ST. PAUL, MINN., has the best bee-supply house in the Northwest. Root's goods.

PILCHER & PALMER, Managers
1024 Mississippi St.
ST. PAUL, MINN.

AS THE ADVERTISING DEPARTMENT SEES IT

It will be remembered that we invited suggestions regarding our advertising columns in the last number of GLEANINGS. As we write this, there has not been time to have many responses, but we expect to hear from a good number soon.

We presume the majority of our readers seldom think that they have any thing to do with the improvement of the advertising columns. We are gratified, however, to notice from time to time in our correspondence the interest taken by our readers in the advertising department of the paper. One subscriber in Massachusetts suggested that we have more eastern advertising, remarking that the majority of the advertisers were in the West, meaning, of course, the Great Lakes region. We presume Pacific-coast subscribers would hold an opposite view. An Indiana subscriber says, "I like your paper because it has no medical or fake advertising." Another subscriber reports having purchased over four hundred dollars' worth of goods of our advertisers, but says he has no suggestions to make. Another one, whose opinion we value, comments unfavorably on a certain advertisement, saying it is not up to the usual high plane of GLEANINGS advertising. Instead of being annoyed at his criticism we feel complimented, and take this occasion to explain further our preceding remark to the effect that our readers have a good deal to do with our advertising columns.



If our readers generally will mention this paper when sending either inquiries or orders to our advertisers it will enable us to make a good showing with the advertiser, and secure renewal orders as well as new business of the same high character. We are aware that this is done largely by our subscribers, even though we haven't kept a standing request for it; for within the past few days we have had a renewal order for 1910 of one of the largest advertising contracts which has ever appeared in GLEANINGS. In this connection it will also be remembered that *Suburban Life* reported returns from GLEANINGS far in excess of the average returns from other magazines.

Now, if our subscribers will continue to patronize our advertisers as liberally as they have in the past (and we feel sure they will), and will especially remember to mention GLEANINGS when making orders or inquiries, it will have much to do with the improvement of our advertising and other pages as well, for of course it is well known that, without the revenue secured from our advertising columns, we can not go to the expense we do for the fine illustrations that have appeared so prominently for the past few years. Nor can we secure such articles as "Selling 20,000 Pounds of Extracted Honey at 3 Cents per Pound above the Market Price" mentioned on page 14 of this issue, and many other valuable high-grade articles.



Referring further to the criticism previously mentioned, that a certain advertisement was not up to our usual high standard, this is an opportune occasion to mention that we often decline advertising that we find in many prominent papers. Just a few days ago we received an order for a full-page copy from a prominent advertiser whose name is already familiar to our readers, and whose copy we very much wanted to run. We were obliged, however, to return it on account of the extravagant claims made, which, in our opinion, did not add strength to his argument, but, on the contrary, would weaken it with our readers. Furthermore, it would be objectionable to them by reason of its extravagance. In numerous other instances, for one reason or another we decline large advertising contracts in order to keep up our high standard; and we again urge the co-operation of our readers, both in their patronage of our advertisers and in suggestions for the improvement of these columns.

Getting Together

By the Bee Crank

A mathematician has figured out that, if all the people of the earth were gathered in one place, giving each one sufficient standing room, a rocket sent up from the center of the company could be seen by every eye in the group.

After all, the earth is a pretty small place—"a mote dancing in the sunlight of infinite space," as the poet puts it.

But you would never dream the earth was so small when you place your order for bee-supplies unless you use care in selecting your dealer. Distance is measured by the mail-order buyer, not in miles, but by the time it takes to get results.

The reason why I seem so near you, measured in promptness of service, is threefold—

1. My geographical location at the center of the population of the United States.

2. I carry a complete line of bee-supplies in stock ready for immediate shipment. Three full carloads have arrived since the first of the year. My new building is a great aid in this respect, and I do not have to hustle around and buy the goods after I get your order.

3. My methods are so systematized that there is no lost motion. Every thing moves on ball bearings, so to speak.

My catalog contains information not to be had elsewhere. It is yours for the asking. Ask for it.

I carry a complete stock of Root's standard goods, and sell at Root's factory prices, giving Pouder service and a saving in freights and time in many cases.

If you have beeswax to offer, I am paying 29 cents cash or 31 cents in exchange for goods.

Write me, expecting a prompt reply.

Walter S. Pouder

859 Massachusetts Ave.

Indianapolis, Ind.



"If goods
are wanted
quick,
send to
Pouder."

Established
1889

GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

H. H. ROOT, Assistant Editor.
A. I. ROOT, Editor Home Department.

E. R. ROOT, Editor.

A. L. BOYDEN, Advertising Manager.
J. T. CALVERT, Business Manager.

Entered at the Postoffice, Medina, Ohio, as Second-class Matter.

VOL. XXXVII

APRIL 1, 1909

NO. 7

EDITORIAL

By E. R. ROOT.

DEATH OF E. L. PRATT.

JUST as our last form was going to press for the last issue we were able to squeeze in a short announcement of the death of E. L. Pratt, generally known as "Swarthmore," which took place on March 11. We have no particulars relative to his death, except that he died of pneumonia, and his illness was very brief. We intended to get a biographical sketch in this issue, and had written for certain facts in his life, but they have so far failed to come in.

Mr. Pratt was a genius at queen-rearing. He devised and improved many a method, both in Europe and America. More anon.

ARTIFICIAL PASTURAGE THAT PAYS; ALSIKE AND BUCKWHEAT.

ELSEWHERE in this issue, pages 198 and 199, we refer to our practice of furnishing alsike-clover seed to the farmers within the vicinity of our bee-yards. Where the seed is to be sown within one-fourth of a mile, say, of a yard, we furnish it free; but for all distances from that to one mile we furnish it at half price. Any thing over a mile we charge full price.

If a farmer proposes to sow a field within one-fourth mile of a bee-yard, and there is a piece of woods intervening, we charge him half price. While the bees will fly over the woods, we estimate that its very presence increases the distance so that the bees will not visit the field in question nearly as much as if the obstruction were not in the way.

We consider this distribution of alsike-clover seed as one of the most important things that a modern apiarist can do to improve his locality for honey. Alsike comes on earlier (and very often lasts longer) than white clover; and even if the field in which the seed is sown is plowed up in two years, the very fact that it is self-sowing makes it more or less perpetual.

Mr. Wm. McEvoy, of Canada, a year or two ago called attention to the importance of furnishing the seed free or at half price, as he found it very materially increased the honey-flow. We are of the opinion that one can increase his surplus possibly 50 per cent in some cases. Suppose one does give away \$50.00 worth of seed; 10 lbs. extra of comb honey for 100 colonies will twice cover the cost. By giving away seed in this way for three or four years the farmers will be willing after that to pay full price; and in the mean time

the soil will be permeated with alsike that will keep on self-sowing in a way that means a constant dividend for many years to come.

In a like manner one can put out buckwheat providing he has a locality where buckwheat will furnish honey. A field of ten acres near a yard will make a very strong showing. While it will not add much to the surplus it starts brood-rearing afresh and brings on new and younger blood for the winter; and if there be more fields they will materially diminish the necessity of feeding.

We expect this summer to furnish seed for 40 acres near one of our yards free. The farmer will make a good thing; so will we.

THE RELATION OF ETIOLOGY (CAUSE) OF BEE DISEASES TO THE TREATMENT.

ELSEWHERE we refer to a bulletin by Dr. Phillips, from the Bureau of Entomology, giving the general statistics and facts regarding the status of apiculture in the United States. Another bulletin, 75, part 4, has been sent out by the Bureau, entitled "The Relation of Etiology of Bee Diseases to the Treatment," by Dr. G. F. White, Expert in Bacteriology, under Dr. E. F. Phillips. Dr. White for a number of years has been giving his full time to the general subject of bee diseases. His bulletin, so far from being an abstract scientific paper, is written in popular form so that any one can understand it.

He very properly says that, in order to understand the nature of bee diseases, we must study and know the causes—that is, their etiology. After speaking of the predisposing causes such as are induced by age, sex, heredity, race, climate, etc., of diseases in general, he goes on to describe the "exciting causes," such as food and micro-organisms. Under the latter he refers to bacteria. He says "it is unfortunate that it is necessary to use the word bacteria, because too many at once think that they are not able to understand any thing about bacteria. This is a mistaken idea. It is not difficult to understand the facts about them." Quoting him directly he says:

Bacteria (often called germs, microbes, and parasites) are very small plants—so small, indeed, that 12,000 placed end to end measure but one inch. They increase in number with marvelous rapidity. Under favorable conditions each bacterium in twenty minutes becomes two. At this rate countless millions are formed in twenty-four hours. As the soil becomes exhausted in which they are growing, many species form spores which are in a way comparable to the seeds of higher plants. These spores are very difficult to destroy by heat and other disinfectants. It is well to remember, concerning the distribution of bacteria, that they are found in very large numbers everywhere about us, but that most of them are as harmless as the vegetables we eat. But should there be introduced into an apiary, for example, the species of bacteria which causes American foul brood, then the brood becomes exposed to the disease and will probably contract it.

Having determined these things about bacteria, we are interested in finding out what they are capable of doing. We learn

that some do good, as, for example, in bringing to decay the remains of dead animals and plants, while other species do harm by their ability to produce disease or death in the animals in which they are able to gain entrance. The disease American foul brood, which causes the greatest loss to the bee-keeping industry, has been demonstrated to be caused by bacteria. Above all, you should understand that the death of the brood is due to one species of bacteria growing in the larvæ.

Under micro-organisms the author mentions protozoa and fungi; but as neither of these has so far been found to be the exciting cause of any bee disease he passes on to the infectious and non-infectious diseases. Under the first mentioned may be included American and European foul brood.

Before a disease can be treated rationally, says Dr. White, diagnosis must be made to determine what disease is prevalent. "Too many believe the treatment of bee diseases consists in the control or eradication of a disease after it has found its way into an apiary. This is only the minor part of treatment. The treatment which is of major importance is a preventive treatment. . . . To prevent disease in the apiary is to keep it out. To keep it out is to keep out the exciting cause."

In referring to American foul brood—that is, the old-fashioned foul brood that is most commonly known, the exciting cause of which has been found, he says:

In American foul brood the exciting cause, *Bacillus larvæ*, is found in immense numbers in the bodies of diseased and dead larvæ. These dead larvæ, for the most part, are allowed by the bees to remain in the brood cell as a scale. The honey also has been demonstrated to contain the bacteria which produce this disease. The pollen may be contaminated with the spores of this disease-producing organism. The combs from an apiary affected with American foul brood are a fruitful source of infection. The inside of the hives which have contained colonies suffering with American foul brood may be contaminated with the germs which cause the disease. Honey-extractors, honey-tanks, and wax-extractors which have been used in infected apiaries are also a fruitful source of infection. Therefore if you are to keep the disease-producing bacteria out of your apiary, and thereby keep out disease, you must not feed honey unless you are positive that it did not come from an infected apiary or that it has been thoroughly boiled. Neither must you use old combs unless you are positive that they have not been in an infected apiary. Use no bee-supplies from an infected apiary unless they are thoroughly disinfected.

In separating the disease-producing germs from the colony all the combs are removed. This removes the principal sources from which the brood is infected—foul-brood larvæ and honey. It is always safer to allow the bees to go into a new hive or a hive which has been thoroughly disinfected. The greatest care should be exercised in protecting all infectious material which has been removed, that it may not be robbed by the bees.

In the last paragraph quoted we draw attention to the fact that he says it is always safer to allow the bees to go into a new hive or a hive which has been thoroughly disinfected. Too much emphasis can not be placed on this point. While we know our friend McEvoy, in Canada, claims that the disinfection of a hive is unnecessary, our own experience has demonstrated that foul brood could be (and has been) communicated by the hive alone. We have had reports from Canada, also, as well as elsewhere, showing the reappearance of the disease when the hive itself was not disinfected. While, 99 times out of 100, merely shaking on to foundation is perhaps sufficient, yet if there is one case in a hundred where disease is transmitted through the hive (and we have ample proof that there is), all hives should be disinfected. We are glad to note that our government officials stand out square and clear on this proposition. So much for digression.

Referring to *Bacillus larvæ*, the cause of American (or old-fashioned) foul brood, Dr. White says the spores of this bacillus are very resistant

of heat and other disinfections. They resist the temperature of boiling water for fifteen minutes; a five-per-cent solution of carbolic acid for two months; the action of mercuric chloride (corrosive sublimate; 1:1000) for the same length of time.

With regard to the use of drugs in general, he says the results do not indicate that they have the value claimed by some of our English writers. That has been our experience, and, in fact, the experience of practically all foul-brood inspectors in this country.

Of the European foul brood (black brood), Cheshire and Cheyne found *Bacillus alvei* to be the exciting cause. Dr. White, in his early investigations, found this species, not in the ordinary foul brood, but in black brood. After years of work, during which he proved his way time and time again, he found the *Bacillus larvæ* was the exciting cause of foul brood, and *Bacillus alvei* present in black brood. But during the past year he found something else which may possibly be the real exciting cause; but like a true scientist he is looking for more proof. Regarding this disease known as European foul brood (black brood) he says:

A number of organisms have been found in the larvæ dead from this disease, and some of them have been described. One species has been encountered in our investigations of the disease which is of special interest. The individuals of this species are quite small, apparently non-spore-producing, and have so far failed to grow when sown on our artificial media. Until we know more about this species it will be referred to as *Bacillus "Y"*. Since the cause is not positively known, the amount of heat and chemical disinfectants to destroy the virus has not been demonstrated. If, later, *Bacillus "Y"* is demonstrated to be the cause, we shall expect very much less heat will be sufficient to kill it than is necessary to kill *Bacillus larvæ*, the cause of American foul brood. Likewise we shall expect that chemical disinfectants will be much more readily effective. Until we know more about the etiology of European foul brood we can do no better than to suggest the application of the same principles which are found advisable in American foul brood.

Some of our European bacteriologists may be inclined to discredit the work of Dr. White; but they should remember that, while they have made investigations covering only short periods of time in reference to bee diseases, he has been giving his whole time to such diseases in particular, paying special attention to American and European foul brood. We have every reason to believe that time will vindicate him in the special work he is doing.

Referring to pickled brood and paralysis he says very little is known about either. These will doubtless receive his attention as soon as he can prove his way as to the cause of European foul brood.

Copies of this bulletin can be obtained by sending five cents to the Superintendent of Documents, Government Printing-office, Washington, D. C. Always remember that stamps will not be accepted. Inclose the coin in a small envelope or piece of cardboard.

"THE STATUS OF APICULTURE IN THE UNITED STATES;" AN INTERESTING ARRAY OF FACTS AND FIGURES.

FOR years there has been an urgent call for some book or pamphlet giving the statistics relating to apiculture in the United States; but until recently no complete set of figures has been prepared; but, thanks to the Department of Agriculture, Washington, D. C., we have now Bulletin 75, part 6, by Dr. E. F. Phillips, that con-

tains an interesting array of facts and figures showing not only the magnitude but the importance and possibilities of bee-keeping in this country. A large amount of data has been gathered from the Government reports, and these are all put in convenient form for ready reference. In speaking of the magnitude and importance of the pursuit, Dr. Phillips, in his introductory remarks, says:

Few persons realize the magnitude, importance, and possibilities of the present bee-keeping industry in the United States. Those who are conversant with the pursuit, and even those who are extensively engaged in it, generally fail to comprehend what an important factor in the agriculture of the country apiculture is as a whole, or how much the honey-bee, by collecting nectar and storing it to produce a commercial product, is instrumental in saving our resources. Although the total value of bee products is small as compared with the value of the products of many other branches of agriculture, it nevertheless has an importance which should not be overlooked. Few rural pursuits have made greater progress during the past half-century than has this one.

According to the census of 1900 the average number of colonies on farms reporting them was 5,8106, valued at \$14.40—a very small investment. In some recent work of this Bureau it has been found that in the State of Massachusetts the average number of colonies reported was 5.5 per bee-keeper. This last figure should not be taken as an index to the condition in the whole country, for as one goes farther west the holdings are found to be larger. In California, for example, while there are some small apiaries, the majority are quite large, and the average is several times that of Massachusetts. The number taken from the census can scarcely be accepted as correct.

The number of men who rely solely on the production of honey and wax for a livelihood is rather small, and most of the extensive producers of the West carry on some other business, at least for the part of the year when the bees are less active. The reason for this is found in the nature of the industry. Any location is limited as to the number of colonies of bees which it will support, and in consequence a bee-keeper must either carry on some other business or establish numerous out-apiaries to enable him to keep bees enough to make it an occupation which will support him. Since the establishment of out-apiaries is attended with certain disadvantages, it usually follows that bee-keeping becomes a minor part of a man's occupation or even a side line.

Then, too, bee-keeping is taken up by many as a recreation or a subject of nature study. Such persons do not wish to make it their sole or main occupation. Many farmers also keep a few colonies of bees and add to their income to some extent in that way. It is obvious that bee-keeping must continue to be an avocation in the majority of cases.

THE SCOPE OF THE INDUSTRY.

Dr. Phillips estimates that the annual production of honey in the United States is somewhere about \$20,000,000 in value, and wax about \$2,000,000. He very properly says that, "since the harvest depends so completely on various high-life conditions, there is an enormous variation in the annual yield." Of the number of bee-keepers in the United States, he places the figures at something like 700,000. In comparing these figures with the United States census report he says, "It is very obvious that the census figures are entirely too small, and are far from doing justice to the industry."

IMPORTS OF HONEY INTO THE UNITED STATES.

A very interesting set of tables is prepared, made up from various custom-house returns, showing the amount of honey annually imported into the United States. This, in round numbers, is something like 2,500,000 lbs. annually. Of this amount, Cuba sends nearly 50 per cent; Mexico, between 20 and 33 per cent; San Domingo from 1 to 10 per cent; Haiti, 1 to 5 per cent; all other countries, 3 to 4 per cent. Of beeswax annually imported into the United States, the amount aggregates something like 700,000 pounds. Of this amount Cuba furnishes the most; next comes Mexico, then San Domingo, the proportions ranging very closely with the per-

centages of honey from those countries respectively.

Of the imports and exports of honey, it is interesting to note that the *imports* exceed the *exports* many times over; but it is a remarkable fact that, away back from 1855 to 1860, there was twice as much honey imported into the United States as during the period from 1901 to 1908, showing the domestic product has served to keep the foreign article out. From 1878 to 1900 the imports ran from 1,000,000 to 1,900,000 lbs. per annum; but from 1901 to 1908, with 1903, the big year, the importations annually increased these figures by 1,000,000 lbs. This is probably due to the fact that the large baking concerns are substituting foreign honeys for the domestic product.

The imports and exports of beeswax show a rather different ratio. Since 1890 there has been a gradual increase in imports, while the exports from 1851 to 1908 have very markedly fallen off. The exports in 1851 amounted to 415,000 lbs., while in 1907 they show only 117,000. On the other hand, the *imports* for the first three decades since 1850 was practically nothing, while in 1908 they reached nearly 700,000 lbs.

Next Dr. Phillips introduces data showing the value of the bee as a pollinating agent. On this question he winds up by saying, "It is safe to say that the indirect benefit of the bee-keeping industry annually adds to the resources of the country *considerably more than the amount received from the sale of honey and wax.*" *Italics ours.*

SOURCES OF LOSS TO THE BEE-KEEPER; WHAT BEE DISEASES COST IN THE UNITED STATES ANNUALLY.

In speaking of the sources of loss to the bee-keeper he mentions swarming, winter losses, waste of wax, enemies, and last, but not least, disease. As an example of the annual loss from the last item he introduces some figures from Mr. Chas. H. Stewart, who is foul-brood inspector of a certain number of counties in New York. Previous to 1899 the disease cost the State in these counties over \$39,000. This was reduced to \$25,000 in 1897; 20,000 in 1900; \$10,000 in 1901; \$5000 in 1902, until it was less than \$2000 in 1905, making a grand total in the counties mentioned of \$110,000. Dr. Phillips says if a loss of \$25,000 is possible through the ravages of bee diseases in a few counties in one State, and if there are many areas much larger where the disease is equally epidemic, the loss from foul and black brood may well be estimated at \$2,000,000 annually. These figures are somewhat staggering, but they are probably not far from the truth. Right in this connection it is interesting to note that, through the work of Mr. Stewart, the annual loss from bee diseases was reduced from nearly \$40,000 a year to less than \$2000. This speaks well of Mr. Stewart.

Eighteen States now have foul-brood laws, and one other State has since been added (since the bulletin was published) making 19 in all.

This bulletin as a whole is very interesting, and should prove to be an important addition to any bee-keeper's library. It can be had by applying to the Superintendent of Documents, Government Printing Office, inclosing 5 cents. Stamps will not be accepted.

STRAY STRAWS

By DR. C. C. MILLER, MARENGO, ILL.

UNCAPPING-MACHINES are in the air. Arthur C. Miller is out anew with a "decapper."

ENOS H. HESS, p. 181, try my kind of upper entrances. Simply slide each story forward or backward enough to make the opening.

R. F. HOLTERMANN, p. 177, thinks plenty of fresh air for bees in winter of more importance than temperature, and ye editor seems to agree with him. Shake.

J. L. BYER, you say, page 164, that your bees roar when it goes above 50, although there is plenty of fresh air. I bet there isn't enough. [We agree with you.—ED.]

REPLYING to Rev. W. W. Howard, in this locality I doubt the advisability of making a start at queen-rearing before clover bloom unless it be in a strong flow of dandelion.

I. W. BECKWITH, I don't believe bees care a whit for the noise of thunder, nor for its jar either, p. 177. It's the clouding up; and the bees will scurry home all the same if there's no thunder at all. [Right you are.—ED.]

J. E. CHAMBERS says, p. 178, "the queen just hatched is no match for the old one." But did you ever know a queen *just hatched* to get into a scrap with an old one? She is just a baby then, and neither queen nor workers pay any attention to her. When she gets older, and puts on airs as a queen, then the trouble begins.

WITH INTEREST I have read Louis Scholl's last item, page 102. But see here, Louis, you make changes, and then say that the shaking which the bees get in the making of those changes puts the energy into them. Are you sure it's not the changes rather than the shaking? Shake one colony—*hard*—without any changes; then make the changes in another with the least shaking possible; then see which gets the energy.

E. D. TOWNSEND says, page 112, that a high-board fence "protects the hives only enough to entice the bees out of doors when it is too cold for them to fly, so that they are caught in the cold wind and lost." Some will take it from that that Mr. Townsend thinks such a fence worse than useless. I doubt if he holds that view. While the fence may do more harm than good on a day warm enough to entice the bees out to be chilled in the colder air above, for every such day there will be 20 when it will be too cold for the bees to think of coming out at all, and then the fence will do a lot of good by keeping the hives warmer.

THAT SCRAP with Coggsall, p. 174. Aren't you two talking about two different things, Mr. Editor? You're talking about sealed covers *with packing* over them. I'm not certain that he is; at least, he *says* nothing about packing over the sealed cover. Makes all the difference in the world. [No; as we take it, Mr. Coggsall and ourselves were talking about the same thing. Some time ago, after seeing our editorial, favoring sealed covers with packing material on top, he wrote us that he differed with us on the prop-

osition, and would shortly send in a communication defining more explicitly his views. They are given on page 174. While perhaps he did not specifically mention that the sealed covers under discussion did have packing material on top, that is implied. It not, he will kindly correct us.—ED.]

WHEN BEES "begin to 'roar,' we would not keep them in the cellar one day longer," p. 152. Some beginner will take that literally, and take his bees out when they can't fly, and lose a lot more than if he had left them in the cellar. Open up the cellar nights, and keep dark daytimes, and wait for a day when they can fly, even if it's a month. [Referring to page 152, we do not see how the beginner can misunderstand if he reads the rest of the sentence from which you quote. For, observe that we added "although we would try to hold off until there is a possibility for the bees to fly." This is quite in line with your advice, except there is an intimation that, under some conditions, the beginner might better take the bees out any way, but we did not so mean it.—ED.]

R. B. ROSS, JR., has my thanks for suggesting that reference to GLEANINGS, 1896, p. 112, would settle a muddle between you and me, Mr. Editor. On page 65, 5 cents was deducted for commission, etc., on honey sold at 15. I said, p. 74, I thought that that 5 cents should be cut in two. You replied that I helped make that figure at a Chicago convention. So I did; but please remember those were the figures of the convention, not mine, and I wouldn't endorse them. Here are the figures, GLEANINGS, 1906, p. 112:

Selling price of honey per lb.....	.140
Freight.....	.004
Commission at 10 per cent.....	.014
Carriage.....	.002
Loss in leakage.....	.007
Shipping-cases.....	.010
Total expense.....	.037
Net cash to the purchaser.....	.103

That was for 14-cent honey. The greater commission on 15-cent honey would make total expense .038—nearly 4 cents, but not 5. But there are two items there that I don't think belong there—loss in leakage, and shipping-cases. I've shipped a good bit of honey, one time and another, and I don't remember ever to have had any "loss in leakage," much less an average loss of 15 cents on each 24-section case. Possibly you may say that, if I didn't endorse the figures, at least I didn't object to them. Please remember that, as presiding officer, I merely put down on the board the figures given me.

Deducting that .017 from the .037 leaves just 2 cents as total expense on 14-cent honey, and 2.1 cents on 15-cent honey. I was wrong, p. 98, in thinking that 2 cents was talked of at the convention. I was mixed up with the fact that for years 2 cents has been my own view. [So you acknowledge, after all, that you had something to do with making the figures. While it is true you did not make them, if we mistake not you accepted them at the time as being approximately right; but, allee samee, we can not help feeling that 4 cents is rather large; and we rather agree with you that it ought not to cost more than 2½ cents to sell a fourteen or fifteen cent honey.—ED.]

BEE-KEEPING AMONG THE ROCKIES.

By WESLEY FOSTER, BOULDER, COL.

PUSHING HONEY.

An effective way to increase the sales of honey is to get the grocer interested. If he likes the honey he will push it. One of my customers instructed his clerks to show a jar of honey to every person coming into the store, with the result that several dozen jars were cleaned out in one day—all the stock he had on hand.

WINTER LOSSES.

A report comes from Fort Collins, Colo., of a forty-per-cent loss in bees. This is due to the large amount of honey-dew gathered there last season. Smelter smoke has practically destroyed several yards near Denver.

The loss of bees in Boulder Co. will not be as high as at Fort Collins, but a ten-per-cent loss is a low estimate, I think.

BEE-KEEPING WITH OTHER LINES OF BUSINESS.

A man broadens his view and gets more out of living by not confining all his energies to one business. There may be some lines of work that require all one's thought; but bee-keeping, I think, goes well with other things. The best bee-keepers in the West are farmers, fruit-growers, business men, etc. They have other interests, especially land investments. The man is a dead one who is not taking advantage of the rise in land values which he himself helps to create.

Personally I like to keep bees, sell honey, write for GLEANINGS, and make my savings earn something through investment in land or bees.

UNPROFITABLE METHODS.

An illustration appeared on p. 1437, last year, of several display-cases for comb honey. These cases were gotten up very neatly, but held only three sections each. I do not think such methods are much credit to the industry. It looks too small. If a grocer can not handle a 24-lb. case of comb he would better not handle any, and let the man handle it who can give it a creditable showing. I refuse to sell less than 12 sections to any grocer; and if the matter is presented to them right they will see it as we do or as we should. This smallness in our business methods eliminated, there will be less questioning, "Does bee-keeping pay?"

Another thing that looks bad, and prevents us from going on to more important work, is taking back from the consumer or retailer honey-glasses, jars, cases, etc. I have even had people bring the sections back to me. These methods are out of date, and a man who wastes his time in such ways will not make a very good living at bees.

[What our correspondent says is true, but Mr. Waggoner, the originator of the case mentioned, advised the use of the small size more especially as a sample case for exhibition purposes, his idea being that the stock could then be kept in regular shipping-cases, behind or under the counter. —Ed.]

SHIPPING-CASES, AGAIN.

I gather from Mr. Crane's remarks on p. 100, Feb. 15, that he assumes it an impossibility to ship comb honey without breakage—at least, much of it is broken before it reaches the retailer. From this he reasons that because honey will be broken it is likely to be a cleaner mess in a single-tier than a double tier case. I do not agree with this; for with the use of a paper tray between tiers the leakage is kept off the lower sections. Further, it is the rule for honey to reach the retailer in good shape in double-tier cases—more so than with single-tier. Perhaps Mr. Crane is of the opinion that all western honey is put up in double-tier cases. This is not the case. Much of it is put in single-tier, and we have a chance to size up the merits from experience.

Thank you, Dr. Miller, for saying the catalogs should answer my objections or change their advice. They will eventually change their advice, for now we have the corrugated paper which is going to be used in cases this year—two pieces for the double-tier case. The drip paper has been used between tiers right along.

What I meant in No. 1 objection, page 1312, Nov. 1, was that the hand-hole in a single-tier case is further from the body of the person carrying it than that of a double-tier case, and so the single case is more difficult to carry. This will not be noticed unless a good many are handled.

My second and third objections are practically admitted by Mr. Root when he says that a cubical box is stronger than a flat one, weight being the same. The cubical double-tier shipping-case will not twist, and it will stand much more stepping on. No! folks should not step on nor sit on comb-honey cases; but we do not have control of all the people who handle our honey, and the strongest box for the same money is the one to have.

My fourth objection to the single-tier case I consider one of the strongest, for it is the little points upon which a sale hinges. A grocer will take the double-tier glass-front case every time—the big showing of honey looks good to him.

Speaking of the weight of a case on a glass show-case, I do see a good deal of this in stores. I have seen cash-registers on top of glass show-cases. The grocer is careless who allows any thing of this kind, however. Editor Root says that, as the case approaches more nearly the shape of a cube, careless freight-handlers have a tendency to lay it on its back or face. This does happen, but seldom, with the single-tier, though it is so easy to wedge into narrow places on edge, and it is done very frequently—more often, I should say, than a double-tier case is laid on its back or face. In the main, I consider Bro. Root's remarks on this serious question in my favor. We are to have the corrugated paper this year for both tiers of sections, and this makes it the ideal case.

The box is more rigid. It is easier to carry. It shows off more honey, and to better advantage. Takes less space on the counter. Protects from dust one-half of the case while the top half is being sold. Will stand stepping on without danger of breakage. [The introduction of corrugated paper has modified this whole proposition. We are frank to admit the double-tier case has much in its favor.—Ed.]

NOTES FROM CANADA

By R. F. HOLTERMANN.

After reading all the valuable articles written by Canadian bee-keepers in the March 1st number of GLEANINGS I do not know in which to feel the greater pride—the Canadian bee-keepers or GLEANINGS. I believe W. A. Chrysler's article on honey-knives is valuable. S. T. Pettit's honey-strainer also seems much ahead of ordinary methods.



SECOND-HAND CANS.

R. A. Burnett's article, page 29, I can fully indorse. Second-hand cans rarely pay for the extra work. I sometimes use them for dark grades of honey, but nothing could induce me to bring cans, first used by some one else, to my apiary. I am too desperately afraid of foul brood to run any such risk.



FOUL BROOD ILLUSTRATED.

At the Norfolk meeting it was also decided to ask the Ontario Bee-keepers' Association to secure copies of a very fine lithograph plate, which illustrates in natural colors a brood comb with the cells affected with foul brood. This lithograph has been distributed in Germany, and would have great educational advantages. The government might supply them to the inspectors of apiaries, and any other interested parties applying for them. It has been decided that the Department of Agriculture will next season increase the number of foul-brood inspectors from seven to fourteen.



ADULTERATED HONEY.

In the last annual report of the Department of Inland Revenue, which has just been issued, honey offered for sale in Canada, imported or otherwise, makes a very poor showing. Out of 253 samples collected by the Department, 116 were found to be adulterated. At the last meeting of the Norfolk Bee-keepers' Association, Morley Pettit brought in a resolution which was passed, requesting that the Ontario Bee-keepers' Association appoint a committee which shall see that parties which have made themselves liable are prosecuted. Something along this line is needed to punish those who adulterate honey and other goods.



STAND BY DR. WILEY.

Referring to your editorial, stating that "the big corporate interests are still after Dr. Wiley's scalp," let me say that the bee-keepers—yes, and the consumers of foods, the producers and exporters of pure food—should actively stand by Dr. Wiley. He has done more than any other man I know of to give pure food to the people of the United States, and he has also given confidence in foreign countries to the consumers of United States foods—a confidence which was beginning to be much needed. The man who is an active agent in securing needed reforms is bound to make a target of himself, especially if he commits the crime of succeeding in what he undertakes. If what has been advocated is of public interest,

and if he is not actively supported and sustained when persecuted by the enemy it is but small encouragement to others to sacrifice themselves for the public interest. By all honorable means strengthen Dr. Wiley's hands *now*.



GOOD STORES.

The following letter will be instructive and of interest. It comes from J. L. Byer, Mt. Joy, Ont., dated March 8.

The March 1st number of GLEANINGS has just arrived, and what you say as to our bees not having had a flight up to Jan. 24 prompts me to tell you that they have not had a flight yet—March 8. One day a few of the colonies had a partial flight, but only a comparatively few bees of any one colony have been out. On Jan. 24 every thing was foggy here, and, as you say, 100 miles often makes a great difference. This year 20 miles made all the difference, as all bees west of Toronto had a flight, I believe. You will remember my claims to the idea that, if the bees have really good stores in abundance, and are properly protected, they do not need a flight for four months or even longer, and I really believe that they are better off without *too many* flights, and especially so under certain conditions which I have not time to enumerate. Well, although our bees have not had a flight since Nov. 25, yet they are in excellent condition. I have just returned from the Altona yard, where I found all colonies clustered quietly. The day was quite warm; and as I gently lifted the corners of the packing for a look in many colonies, the bees were observed to be *all over* the hives, and as quiet as though it were in November. Although the sun was shining brightly, and no boards were up in front of the hives, yet hardly a bee was flying, showing plainly that they were in no distress; for if such was the case, as warm as it was to-day thousands of bees would have been out.



Mr. F. J. Miller, last year president of the Ontario Bee-keepers' Association, has kindly sent to the writer, for use in GLEANINGS, the following method for quickly finding queens. He also writes in a separate letter, "I ask that you send it forward without *carving*, as a slight change in detail will surely affect results." By quoting Mr. Miller, the reader can be warned against changing in any way the method recommended, as a "slight change in detail will surely affect results."

MY QUICK AND SURE METHOD OF FINDING QUEENS FOR CLIPPING IN ALL STRONG COLONIES WHILE UNPACKING.

Smoke the bees as little as possible while removing from the cases. As soon as a group of four is unpacked, smoke one of the strongest colonies well, and wait about one minute, or possibly one and a half when using a frame as deep as the Langstroth. Now again smoke gently; and, *immediately* following the second smoking, listen attentively to the roar of the bees, and fix in the mind the key in which it is being sounded. In a few moments this will change with a sudden drop to a lower note. By again carefully fixing the sound, a second decided drop will be noticed (the time lapsing between the changes in sound being greater with an old queen). Now lift the cover as quickly and quietly as possible, and on the under side will be found the queen. In case of a queenless colony there is no decided drop in the sound, but a prolonged roar with a gradual dying-away.

London, Canada.

F. J. MILLER.

[There is a bee-space on the under side of Mr. Miller's covers.—R. F. H.]

CLOVER KILLED BY DROUTH; WILD-MUSTARD HONEY DOES NOT GRANULATE.

In regard to white clover for 1909, it looks to me like a poor prospect. A very little green white clover is to be seen now. The blue grass has grown up green since the drouth of last summer.

We have a new plant about three feet high, called wild mustard, with yellow bloom. It produces a fine-flavored honey, amber in color, and very thick. It does not granulate.

Boonville, Ind., Jan. 25.

L. ECKSTEIN.

GLEANINGS FROM OUR EXCHANGES.

By W. K. MORRISON, MEDINA, O.

In connection with the international exposition for the east of France, which will be held at Nancy, from May to October, there will be an apicultural congress from August 21 to 24.

The reason why Mr. Scholl's honey did not keep is simple. It was kept in too cold a place. The fact that the levulose separated from the dextrose shows it. A temperature of 90° is none too high for honey.

At the census of 1873, Alsace and Lorraine had 80,694 hives, of which 17,165 were modern movable-frame devices. By the census of 1907 the number was 86,579, of which 60,000 were supplied with movable-comb frames. The beekeepers' association has a membership of 6000.

Mr. Alin Caillas, author of a memoir on the adulteration of honey and wax, has been "decorated" or "crowned" by the Agricultural Society of France as a recognition of the work he has done for bee-keepers. He recently discovered that honey shows radio-activity, at least some kinds of it.

PLURAL QUEENS IN EUROPE.

A writer in *Praktischer Wegweiser*, who hails from Brunswick, says that in the winter of 1903 he successfully wintered three queens in one colony. In 1904 he tried six, and one of these died early in 1905. In the winter of 1905 he again tried six in one colony, but this time three died; but the three left were all right. This present winter he has five queens in an extra-strong colony.

A FRENCH HONEY-PRODUCERS' LEAGUE.

Some ten years ago an effort was made to found a honey-producers' league by certain beekeepers in France, but without much success. They now propose to organize themselves thoroughly, and for this purpose they publish in the February number of *L'Apiculteur* the proposed constitution and by-laws. Mr. H. Josephff is the provisional secretary and manager. Their headquarters are the rooms of the Central Society of Apiculture, 28 rue Serpente, Paris.

There is a story going the rounds of the newspaper press regarding the number of bees in Europe. It is misleading, though taken from a German trade paper, *Handels Museum*. For instance, it credits "brave little Holland" with 240,000, and Russia the same. I suspect that one single Russian province contains that many, for Russia is a great honey-producing country, and always was. It has six or seven good bee-journals, and is forging ahead fast. Russian Poland is a great bee country, and has been for many years.

As to irrigation projects engineered by Uncle Sam, it should be clearly understood that on nearly all of them alfalfa will be king for some years to come. Of course, there are exceptions, but very few. They are mentioned in *GLEANINGS* because the homesteads on them are given away *gratis*. On a number of them there is still room for more settlers. Even on new private projects near Denver, alfalfa will be king, and I know of land not twenty miles from Denver which gave good crops of honey 25 years ago, and it is still productive.

Referring to Mr. J. A. Green's observations on beet sugar, I quite agree with what he says except as regards the distance beet sugar is sent. A year ago the *Gem State Rural*, of Idaho, in speaking of the same subject, said that the house-keepers in that State preferred cane sugar, and actually paid 25 cts. per 100 lbs. more for it, though the beet sugar was produced right at home, and the cane came from the Atlantic or Pacific seaboard. The beet-sugar men were evidently incensed at this. As to the bluing in beet sugar, it is claimed that the sugar-men maintain an expensive lobby at Washington to fight Dr. Wiley. The latter wants to suppress bluing in beet sugar and sulphur in cane. He will ultimately succeed.

If you wish to plant a climber that is particularly grateful to bees, try *Antigon leptopus*, sometimes spoken of as *Coralita*. It covers a veranda or porch with great rapidity, and its rose-pink blossoms are beautiful. The bees work on these unceasingly. As it is a native of Mexico, it can not stand a freeze; but if carefully treated it will spring from the root the following spring. Various seedsmen supply the seed.

Among bulbs nothing will surpass the Bermuda buttercup oxalis for bees. It bears a profusion of yellow blossoms which remain for quite awhile. The bulbs are cheap, and easily procured. It is a fine pot-plant. It might be naturalized in California with good results.

Even so conservative a paper as the *Pacific Rural Press* is throwing mud on Dr. Wiley from all directions. This is because he takes the ground that sulphuring dried fruits is contrary to the provisions of the national pure-food law. The Californians interested have raised funds to "protect" their "interests," but the consumers in the effete East do nothing. It was always thus.

If these "interests" would do as bee-keepers are doing, turn out a faultless product, they would not do this. Formerly it was thought sulphur was excellent for the human constitution; but medical men now think differently. Even salt is not recommended except in very limited quantities. Not long ago it was considered a promoter of long life and happiness.

Honey-men should make a long handle of the fact that their precious sweet does not require salt, sulphur, benzoate of soda, nor any other mineral preservative. The whole thing is digestible, even by a baby, and it is *all* digested—no waste. The American consumer is being rapidly educated on the subject of the healthfulness of certain foods which were formerly considered excellent for human consumption.

CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK.

OVERSTOCKING; HOW FAR DO BEES FLY?

"Mr. Doolittle, I have not forgotten what we were talking about last month, and I have been inquiring of every man whom I thought would know any thing about the matter for a location for bees similar to the one you described."

"Well, what have you found, Mr. Smith?"

"Very nearly what you hinted at in the last thing you told me before I left—that it would be impossible to find all the necessary plants and trees in any one locality to give me the very best location. But I did hear of one place nicely sheltered by a piece of woodland, where there are willows in plenty, hard maple and fruit bloom to a fairly good extent, white and alsike clover by the hundreds of acres, and a few basswood-trees in some gullies, and scattered up a hillside two miles away. The farmers make quite a business of raising buckwheat, many of them sowing from ten to twenty-five acres; but there are no fall flowers save a little goldenrod about the roadside, fence-corners, and other rough places. Do you think I can do better than this?"

"It is very doubtful; and I should be inclined to think that you might find a good basswood yield, for the majority of people do not think that the trees in gullies and out in the open are of any consequence, because they are of little value for lumber; but as a rule such trees give very much more nectar than the straight tall ones which grow in a thick forest. Rough crooked trees not only have twice the twigs and branches, but they seem to give more nectar to each flower than do those growing in the sheltered woodland."

"That is encouraging, and I think that is the place I shall settle upon. Then this is the only place I have heard of where there are no bees kept within three miles. At other places which seemed equally good there were from one to three apiaries with from twenty to one hundred colonies. You would not think it advisable to go where there were apiaries already established, would you?"

"No; and I am glad to know that you are so conscientious that you would not think of locating in territory already occupied by some one else. To do this would not only be an injury to the one already keeping bees in such a locality, but it would lessen your chances of success as well."

"From what I have told you of this place, how many colonies do you think I can eventually keep with the best results?"

"My views on overstocking may not be considered quite orthodox by all; yet I think I can give facts to prove my position. If I had a location such as you describe I should not fear overstocking it if I had three or even five hundred colonies. When we consider that bees fly, from choice, from two to four miles from home, and are led on by receding bloom to five, six, and seven miles, as up a hill or mountain side, this matter of overstocking is not so much to be feared as many suppose."

"But I have been told by several that bees do not go more than one and a half miles from home."

"I have been told the same; but from much experience during the past I am sure that such statements are fallacious."

"What has been your experience, or what proof can you bring to prove your seven-mile theory?"

"In my early years of bee-keeping we had nothing but the common or black bees in this part of the world. After a while a bee-keeper living three miles distant procured the Italians, increasing them to about twenty colonies the first year by artificial means, so that no swarms ran away. The next spring, before I had any Italians, I was watching the bees at work on apple-blossoms, and presently I saw an Italian bee collecting honey or nectar. This led to a careful examination by way of a count which showed that an average of one bee in five was an Italian, and this with apple-blossoms in profusion everywhere. That same season, when cutting a field of red clover one mile further off from these Italian bees, or four miles in a straight line, I was attracted to bees at work on the clover bloom. Having read how the Italians worked on the red clover while the common bees did not, I jumped off the mowing-machine, and, to my surprise, counted five Italians to two blacks, as the average of several countings, with fields red with clover everywhere."

"But you do not claim that bees can work profitably thus far from home, do you?"

"This question shows me that you are acquainted with the objections of the past—that it is not profitable for bees to fly so far. Let me tell you of some of the things I know in this matter. To the southeast of where we are now talking the land rises more or less gradually for six miles, or to the highest point in this county, where it is from 850 to 900 feet higher than where we are sitting. Unless interrupted by a long rain the bees follow the receding basswood bloom till the top is reached, and I can see no slacking of work in the sections as long as the bloom is plentiful on the hilltop. The bees, also, nearly all work in that direction."

"What has the rain to do with the matter?"

"Just this: If it rains so long that a strip of bloom, say half a mile wide, has gone during this rain, the bees, when the weather is clear again, go where they last found nectar, and, not finding any, they seem to think that the bloom must all be gone, so return without looking further, and thus the mile or more of bloom beyond is of no use to me."

"Well, I hope you are right; but I had the one and a half miles so thoroughly fixed in my mind that it is hard to get away from it."

"If proof could be given that this short distance was really the range of flight of the bee, then I should say that your proposed locality might be overstocked with from 150 to 200 colonies. But Mr. Alexander's 700 colonies, profitably kept in one place, should convince any one of the fallacy of the one-and-one-half-mile-flight theory. Keep your colonies strong, and especially so when your clover, basswood, and buckwheat bloom is at its height, and you will have no cause to complain, I am sure."

GENERAL CORRESPONDENCE

THE WILLIAMS SYSTEM OF MANAGEMENT.

More Concerning the Plan of Shaking Bees at Various Times to Give them the Energy of a Newly Hived Swarm.

BY GEO. W. WILLIAMS.

[On page 48, Jan. 15, we commented on the article by Mr. Williams in the December issue of *The Bee-keepers' Review*. In the following article the same writer gives some additional points on this very interesting subject of shaking energy into bees.—ED.]

I have been experimenting for years, looking forward to perfecting a system adapted to the management of a series of outyards for comb honey, so that I could keep enough colonies to make a specialty of the business, and to allow me to use ordinary unskilled help.

We meet, in practice, some moods and contrary notions in the bees that must be overcome before we can obtain a good crop of honey; but we sometimes find, on the other hand, a mental condition that overcomes all these, and would insure a full crop if we could continue it throughout the season. I have reference to the condition of intense and energetic activity shown by normal colonies at the sudden opening of a heavy flow, and also shown by a newly hived natural swarm.

Immediately after a natural swarm enters the hive, work begins in all departments with great vigor. Combs are built, eggs deposited, and honey gathered as if life depended on the issue. This mad scramble to "do things" lasts quite a while, usually, but abates with the progress of the work accomplished. If this desirable mental condition which induces this strenuous work were permanent, bee-keeping would be a sinecure; but we know it does not; and in the degree that it fails, in that degree do we miss the possible profits.

Now, the question naturally arises,

WHY DO BEES WORK SO DILIGENTLY AFTER THE ACT OF SWARMING?

Is it a psychological condition that is caused by the desire for natural increase, or is it a purely physical condition capable of being reproduced by mechanical means? Most if not all writers I have followed attribute the intense activity of this period to the maternal instinct; but I have believed for years that, while the act of swarming itself is, of course, due to the desire for the perpetuation of the species, the resulting activity is the result of the physical conditions attendant on the act, and I have found that these desirable conditions may be reproduced at the will of the operator, and last summer's work has shown to me the pecuniary possibilities of the idea.

The one factor upon which the effectiveness of a system built around the idea of "shaking" depends is the nearness which a "shook" swarm comes to resembling a natural one in the intense activity and other desirable qualities. That they

are practically identical is, I believe, accepted by most of our observers, and I have demonstrated it to my own satisfaction by hiving natural and "shook" swarms alternately and noting results. I find in my experiments that the psychological results are nearly alike in each, and vary in degree only as the shaking is more or less thorough. And the principal value of this idea lies in the fact that this "shook" condition can be so easily and quickly produced by skilled or unskilled labor.

SHAKING FOR STIMULATIVE PURPOSES.

It was while experimenting with "shook" swarming, and noting the resulting conditions, that this idea suggested itself to me. Why not apply this simple process to induce the bees to go to work in the sections—accept a new queen—stimulate brood-rearing, quit loafing, or, in short, induce them to do any of the many things that a newly hived swarm will do as a matter of course. The idea was so simple and obvious that I supposed surely some one had advanced it before; but I have never found where it has been advocated.

Then I went to work and built up a system around this idea, and tested it last season, in a small way to be sure, but thoroughly and practically. I find that I can care for more bees with less help with this system than with any other. It seems to be adapted to long-range work, and especially to outyards. The weak point so far observable is that it stimulates brood-raising, and promotes swarming to some extent.

Take, for instance, stimulative feeding. We have had many different plans offered; viz., out-door feeding, in-the-hive feeding, uncapping the honey, and others, all requiring time and utensils, and endangering robbing. Now, by my system, at the proper date, I "dump" the bees in the proper manner, and the thing is done. Five minutes finishes the job, or less if I am in a hurry. It is not necessary for me to explain the philosophy of the proceedings. The bees are put in the condition of a swarm, and therefore "stimulated" in the best possible manner. Of course, this contemplates a sufficient store of honey for their use, otherwise the feeding required is not "stimulative" but "life-preserving." A proper "stimulating" means, in a good season, a bumper crop, and in any season an increase.

I am aware that bee-keepers usually "go through" their hives about this time, and thereby stir up the bees more or less thoroughly, and usually "spread the brood" or something else equally silly, and attribute the results to the wrong cause. I have found by actual experience that the colony that is simply stirred up really does better than the one that has the brood spread and fully as much as the one that is fed to stimulate it.

This season I worked six colonies on this plan, and I found it increased their efficiency about 38 per cent over colonies worked differently.

I wished to increase this yard as much as possible, and worked to that end and made honey a side issue, although I secured a good crop. I did not feed any, and the results are entirely the results of their own efforts. In summing up this fall, I put 21 fine colonies into winter quarters, each with 30 or more pounds of winter stores, and secured 1368 sections of honey, besides about 80 extra combs and 100 lbs. of chunk honey. 1

used only inch starters in the brood-frames, and the average amount of honey was (estimated) 220 lbs. of surplus per colony. The best I could do with my other bees handled differently, but with the same chance, was 125 lbs. of surplus per colony, spring count, and doubled my increase.

I feel assured that there is a future for a system built around this idea, especially for comb-honey production in out-apiaries. I see so much promise in it that I expect to establish soon a system of out-apiaries a mile or so apart, none of them very large, and make this idea the dominant one in my system of management.

Redkey, Ind.

[We have already given our testimony to the effect that we believed, from numerous experiments of our own, that there was something in this scheme of shaking bees. How far it may prove successful in increasing the amount of honey we can not say.

We should like to know particularly whether a "shook" swarm is to all intents and purposes the same as a natural swarm. Many have practiced "shook" swarming, and, as a matter of course, there ought to be quite a number who could give testimony on this point.

In the mean time it is interesting to note that the late E. W. Alexander practiced shaking to induce new energy in a lazy colony. The following, from Mr. Cox, will be read with interest at this time.—Ed.]

SHAKING ENERGY INTO BEES AS PRACTICED AT THE ALEXANDER YARD.

I see in GLEANINGS, page 48, Jan. 15, an inquiry about shaking energy into bees. As Mr. E. W. Alexander is dead, and his writing for ever done, I may be allowed to say that shaking was practiced on the lazy colonies in his big yard at Delanson.

The first time I saw it tried was during the buckwheat-honey flow of 1906. There was one very strong colony that would not work. They were so strong that the hive looked black on warm evenings, and there would often be several quarts of bees in the grass around it; yet it gave no honey when we came to extract.

Just after the second trip over the yard, when there was still no honey from that hive, Mr. Alexander called me to help him, and we took every comb and frame of brood away and shook them and gave in their place frames of foundation above and below. I remember Mr. Alexander's remarking, "That is the way to fix colonies that will not work;" and as I let the queen run into the entrance he added, "It would not have been a very bad accident if we had dropped that queen and stepped on her."

One very hot Sunday afternoon, some ten days later, I saw honey running out at the entrance of that hive. Investigation showed the worst case of broken-down combs I ever saw. That colony had gone to work; in fact, with the help of the hot day they had overdone the matter.

Sloansville, N. Y., Feb. 1. R. V. Cox.

[It is remarkable how many tricks of the trade Mr. Alexander knew and practiced.—Ed.]

PROSPECTS FOR THE WHITE-CLOVER HONEY CROP.

A Drouth in May and June Hurts Clover More than Any Amount of Dry Weather in the Fall.

BY OREL L. HERSHISER.

There may be isolated localities east of the Mississippi River where 90 per cent of the clover that would have produced honey is dead, and the failure of the crop is an admitted fact; but I believe there are vast areas in that same drouth-stricken region where the clover, down to the present time, is practically unharmed. I believe we shall have a white-clover honey crop if the weather conditions in April, May, and June are propitious.

The normal amount of rainfall and generous growth of clover does not necessarily insure a good honey crop. It may be too cold, or the winds may be so drying as to counteract what would otherwise be an abundance of precipitation; and these or other causes militate against the secretion of nectar. On the other hand, much less than the normal precipitation does not necessarily mean the destruction of the clover or the drying-up of nectar secretion. Sometimes the air is humid when there is little actual precipitation, and the ground is said to dry slowly. It is the hot, humid, sunshiny days that promote the abundant secretion of nectar.

The summer and fall may be very dry without killing the clover. In this immediate locality the weather was very dry from August 18 to Oct. 31, a period of 74 days, during which time the precipitation amounted to but 2.04 inches, whereas the mean precipitation for that period is about 8 inches. Although the drouth was severe in some respects, drying up wells and creeks, and causing numerous forest fires, the clover and grass at all times looked green and vigorous, although not rank, and did not appear to suffer. The soil contained enough moisture to promote a slow and steady growth; and my impression is that there was more than ordinary root development. There was little or no destruction of the plants that will, under favorable conditions, bloom next season. Right here let me mention that it is my experience that seedlings of last season are the plants that will attain to greatest vigor and bloom with the greater luxuriance next season, after which, if they do not die the following fall, will be so far exhausted as to be feeble bloomers the third year; and especially is this true of alsike clover. If alsike clover is cut for seed when dead ripe during a continuous dry spell the plants will surely die. This fact is familiar to the alsike-seed growers. But, to return to the weather conditions of last fall, there were but few windy days during the dry period; and when the forest fires were raging there was so much smoke as at times to obscure the sun before 8 A.M. and after 5 P.M.; and he was much bedimmed during mid-day. Thus did the smoke screen the sun's rays, shorten the period of daily sunshine, retard evaporation from the soil, lessen the burning effect, and surround the clover with the best conditions to withstand the drouth. The burning of Minnesota, Wisconsin, Michigan, and Canadian for-

ests, and the destruction of countless acres of honey-yielding raspberry-ranges may not be an unmitigated loss. The pall of smoke has undoubtedly saved to the husbandman, over a vast area to the east and south of the fires, his hay and pasture ranges for the forthcoming season that else might have been destroyed. There has thus been abundant and far-reaching compensation.

The conditions that not only carried the clover safely through the drouth, but, in addition, promoted its growth, also gave it greater powers of resistance against adverse winter conditions. The long warm fall and dry earth was favorable for deep rooting, it being necessary for the vigorous

cretion may be traced to variations in weather conditions.

For the better study of the conditions affecting the white-clover honey crop I present herewith portions of two tables from the Buffalo station of the United States Weather Bureau, one showing the monthly and annual mean temperature of each year as well as the mean monthly and annual temperature as determined by observations over a series of years. Also a similar table compiled as to precipitation. The mean monthly and annual temperatures and precipitations as determined from observations over a series of years are the standards of comparison with any one season, the variation from the normal which it is desired to determine. These tables are reliable only for the territory in the meteorological area surrounding Buffalo. It is not likely that the data of any two stations of the Weather Bureau are identical, as oftentimes the showers and storms are, to a great extent, local, and there are also wide variations in temperature for different localities. The portions of the tables I have used cover a period of twelve years, over which period I have a pretty clear recollection of the honey crops, and it includes several bountiful white-clover honey seasons as well as some seasons of

failure of honey from this source. The correctness of my deductions as to the effect of April, May, and June precipitation and temperature can with reasonable certainty be read from these tables.

Reference to the table of precipitation for the year 1897 shows a very dry September and October, it is true; but this dry period was not sufficient to destroy the clover in view of the very nearly normal precipitation during the early summer and the unusual rainfall in August, thus making a growth that would stand a long dry spell. But the year 1898 shows but a little less than $\frac{2}{3}$ the mean precipitation for April, May, and June, and I have a vivid recollection of a

white-clover-honey failure. During the rest of the growing season, however, there was very nearly the mean precipitation, and there was undoubtedly a fair setting of clover. Again, in the spring months of 1899 we have a precipitation of but little more than half the mean for the three months, although that for May is a little above the normal. Again, the lack of moisture at the right time spelled failure of the white-clover honey crop. That year may be said to have been dry nearly all through the growing season, the precipitation for the five months from April to August inclusive being more than seven inches less than the normal.

It is likely that very little white clover got started from the seed that season, and it must have been severe on the old plants. For the third successive season, April, May, and June, 1900, show a decreased precipitation, this time considerably less than half the normal. I remember distinctly the difficulties I experienced in obtaining suitable honey exhibits of the crop of 1900 for show purposes at the Pan-American Exposition in 1901. The failure of the white-clover honey crop

MONTHLY AND ANNUAL PRECIPITATION.

Year.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann'l
1897	3.60	3.13	3.54	2.56	2.62	1.95	5.20	2.12	0.37	0.80	5.21	3.59	37.72
1898	4.51	2.97	1.97	1.37	1.66	2.14	1.20	2.65	3.04	4.49	3.98	3.52	33.50
1899	2.88	1.62	3.03	1.02	3.22	0.60	2.60	0.52	4.48	2.99	1.28	5.06	20.30
1900	3.82	5.21	3.80	1.13	1.22	1.22	2.97	3.69	2.90	3.39	5.32	1.26	35.93
1901	3.31	3.26	3.03	3.13	3.28	1.39	3.05	2.07	3.29	1.29	2.87	5.52	35.49
1902	4.01	2.33	1.81	2.04	1.85	4.20	4.53	1.72	2.73	3.09	1.03	3.57	32.91
1903	4.23	2.90	3.33	4.48	1.69	3.95	4.07	5.29	0.81	2.15	1.36	3.70	37.95
1904	4.78	4.32	3.51	2.79	3.12	2.83	3.87	3.41	2.11	1.93	0.57	2.65	35.83
1905	4.48	2.46	1.49	2.38	3.23	3.45	2.38	3.51	2.42	4.54	2.44	3.07	35.85
1906	2.17	1.41	3.89	2.01	1.34	1.77	2.42	1.82	3.43	7.57	1.90	3.90	33.63
1907	4.23	1.32	2.70	2.00	3.73	1.91	2.53	1.01	3.73	4.86	2.67	4.28	34.97
1908	2.90	5.18	2.59	3.60	4.08	2.45	3.40	2.85	1.06	0.98	2.23	2.92	34.24
Means	3.23	2.95	2.69	2.41	3.14	3.09	3.35	2.99	3.10	3.47	3.24	3.39	37.00

Greatest and least precipitation in italics.

plants to strike deeper than usual into the earth to obtain the needed moisture; and the soil, not being saturated when winter set in, heaving will be reduced to a minimum.

We have had an open winter down to the present time, and the ground has frozen and thawed, and snows have come and gone repeatedly, and yet there has been practically no heaving.

It is certainly satisfying to feel that we have all the clover and the conditions for good wintering that are necessary for a good white-clover honey crop; but the weather conditions for April, May, and June are yet to be reckoned with; and these have more to do with the result than their conditions of the year.

MONTHLY AND ANNUAL MEAN TEMPERATURES.

Year.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
1897	25	28	34	44	54	62	74	67	63	54	40	30	48
1898	28	27	41	43	57	67	73	71	67	54	40	29	50
1899	25	21	32	47	56	66	70	72	60	56	42	31	48
1900	28	23	25	44	55	66	70	73	68	60	42	31	49
1901	27	18	33	46	54	66	74	72	64	53	36	27	48
1902	25	22	39	45	55	61	70	67	64	52	38	28	48
1903	26	27	41	44	60	62	69	66	64	52	38	25	48
1904	19	17	32	39	57	66	68	66	61	49	38	24	45
1905	20	18	33	41	54	64	71	68	64	53	37	33	46
1906	83	25	27	43	54	65	71	72	66	51	39	27	48
1907	26	19	35	38	48	62	69	66	62	48	39	32	45
1908	26	21	33	41	56	66	71	68	66	54	42	30	48
Means	24.9	23.8	31.2	42.4	54.3	64.8	69.8	68.6	62.7	51.2	38.9	29.6	46.9

Highest and lowest temperatures in italics.

If during April, May, and June we have the normal precipitation and temperature, an absence of drying and parching winds—those that too rapidly counteract the effects of the normal precipitation—and a humid atmosphere and hot sunshiny days during the period of bloom, then shall we have nectar secretion in abundance.

Note the wide variance in honey-gathering that sometimes occurs from day to day during the height of bloom. These variations in nectar se-

seemed to be as wide spread as was the drouth. The summer of 1899 being unusually dry, and followed by the still dryer season of 1900, up to the end of July, and perhaps into August, the conditions were not favorable to the growth of white-clover seedlings that would yield honey in abundance the following season; but from August to the end of the season the conditions were very favorable. It may, therefore, be assumed that, after the two protracted dry seasons, the bulk of the clover that gave the crop of 1901 started after the middle of the summer. I believe New York and Ontario bee-keepers generally will bear me out in the statement that the season of 1901 gave us a bumper yield of white-clover honey. In and adjacent to Buffalo it was as good a season as any of which I have recollection. This was a bumper season clear through, and it will be noticed that it was a year of nearly the normal precipitation during the spring and summer months, except June, which shows less than half the normal precipitation. However, it is to be remembered that there were light drizzling warm rains and very humid conditions nearly every day in May—just the conditions to promote the best growth of clover, and the plants thus got a start that enabled them to pass through a short drouth in flourishing condition. It will be noticed that the temperature of the spring and summer months of this season is considerably above the mean, except May, which was almost constantly cloudy, notwithstanding which it lacks but .4 degree of the normal.

Following the season of 1901, and up to and including the season of 1905, the precipitation and temperature for the spring and summer months were comparatively normal, and we had continuously good honey seasons; and it will be noticed that the precipitation of the summer of 1905 shows it to be favorable to the setting of clover.

There was an unusually rank growth of the yearling clover that bloomed, which may have counteracted the apparently favorable conditions and smothered many of the seedlings and young plants. Fairly well saturated soil and an open winter following the summer of 1905 caused an unusual amount of heaving, and the result was that but little of alsike, white, or sweet clover survived the winter and spring; and what came through produced a growth so feeble that it can hardly be accounted for by the comparatively dry spring months with a precipitation of a little less than $\frac{2}{3}$ the mean. Query: Does an unusually thick and rank growth of clover impoverish the soil temporarily of the elements best suited for clover, so that the soil needs a rest or change? The above combination of conditions caused a failure of the clover-honey crop in this locality in 1906, following the best clover growth (in 1905) that I have ever seen.

Again, the season from July to the end of the summer and fall of 1906 was favorable to the growth of white clover, and our hopes rose accordingly. The record of precipitation for 1907 would indicate that we ought to have had a pretty fair clover season, but it was nearly a failure. We all remember the spring of 1907, how "Winter lingered in the lap of Spring." The temperature of April was 3.4 degrees; May, 6.3 degrees; and June, 2.8 degrees below their respective monthly means, and the spring and summer sea-

son was from three to four weeks late. Apple-trees that usually bloom here from the 12th to the 15th of May did not bloom until June; and basswood, that usually blooms about the 4th of July, did not open until near the close of the month. No wonder that, with a nearly normal precipitation, enough to produce a fair honey crop ordinarily, we were again met by failure of the white-clover honey crop. But white clover grew, and thus was laid the foundation of the very satisfactory clover honey crop of 1908. Last June and July we had numerous local heavy showers, which make the table of precipitation look favorable; but in many localities the clover crop was cut short by dry weather late in June and early July.

Conditions in this locality have been propitious for a white-clover honey crop up to the present time, and I believe these conditions prevail throughout most of the region north of the Ohio River and east of the Mississippi. I doubt not that the conditions with Mr. Weaver are such as to cause him to reflect a gloomy view upon our prospects for a clover-honey crop; but viewing the matter from another point, and with past experience as my guide for the future, I would say to the bee-keepers east of the Mississippi generally that there is no present need to make preparations to "ship to the mountains." I believe that, in this locality, we have possibilities for as good a crop of white-clover honey as we have had at any time within my apicultural experience, and that the same will hold good for all similarly circumstanced. Go right on preparing for the outpouring of clover honey. The chances are more than even that you will not be disappointed.

Kenmore, N. Y., Feb. 24.

ALSIKE CLOVER.

Sown with Timothy and Red Clover it Greatly Improves the Hay, and Furnishes Additional Pasturage for Bees; How Poor Bee-ranges May be Made Good Ones.

BY BARRET PIERSON.

I have noticed your efforts for several years to have bee-keepers encourage the growing of alsike clover; but as no one has told of its most profitable culture I write you the methods used here.

For several years the agricultural press has advocated the sowing of more clover upon the farms of this country, showing that the clovers remove free nitrogen (the most expensive element of fertilizers) from the air and leave part of it in the soil, and also furnish protein (the highest-priced element of food) in the cheapest form, so that it will be unnecessary to enter into that discussion here.

Pound for pound, alsike-clover hay is worth as much for feed for cattle and sheep as either of the red clovers, and very much more for horses, because it is free from the fuzz on the stalks which makes so much dust; but as alsike clover does not grow as large as either the common red or the mammoth clover it is rarely as valuable for forage when grown by itself, though sometimes when grown by itself as a seed crop the money

returned per acre will exceed that of any other crop.

Twelve or fifteen years ago, in this immediate vicinity a few farmers began adding one quart of alsike-clover seed, for each acre to be sown, to the mixture of red-clover and timothy seed. This practice proved so satisfactory that it has been adopted by all the farmers throughout this section of Michigan, where hay is one of the most important crops.

The practice usually followed is to take four quarts each of red-clover and timothy seed, and one quart of alsike-clover seed; mix them together, and sow with a nurse crop of wheat, rye, oats, or barley, in the spring; then run a smoothing-harrow over the ground.

The quart of alsike-clover seed thus sown to the acre with the red clover and timothy will show with the red clover; and in wet places, where the red clover will not live, it will grow if the ground is not covered with water for several weeks at a time. After the first year the timothy makes the crop which is cut for two or more succeeding years, and the alsike clover will grow all this time, filling the bottom and improving the quality of the hay.

This amount does not impair the selling value of timothy hay, as it is not dusty or black, like the ordinary red clover. Timothy hay, which would pass as No. 1 without it, will pass as No. 1 with it if no larger quantities of seed than I have stated are sown to the acre.

One year taken with another, this is the most profitable plan for growing alsike clover. By sowing this amount of seed the average yield of hay per acre will be increased at least 25 per cent, as it will grow in low and wet places, and where the timothy is thin. It will last in the ground as long as the timothy, improving the value of the hay as feed, and furnish pasture for the bees, thus increasing the amount of money returned by the crop, and improving the mechanical condition of the soil.

Those who are trying to encourage its culture in their neighborhood should recommend this plan, especially if they are furnishing the seed, and they will be justified in recommending it, because it is not the theory or experience of only one man, but the practice of thousands of practical farmers. One experiment will convince any good farmer of its value, and the future crops will be taken care of by them after that.

Where alsike clover is generally grown, its value to bee-keepers can hardly be overestimated. It blooms fully one week earlier than the white clover, and lasts as long. Being grown upon cultivated soil it yields more nectar than the white clover grown by the roadsides and in the pastures; and in years of severe drouth, like 1908, where the white clover is undoubtedly injured to an extent that it will not produce a crop of honey the following year, the alsike clover in the old meadows will come through in good condition and produce its usual crop.

Flint, Michigan.

[We have been and are making it a practice to furnish alsike-clover seed free where it is to be sown in cultivated soil within $\frac{1}{4}$ mile of our apiaries. For all distances more remote, and within one mile, we furnish it at half the market price. By pursuing this policy we have greatly

increased the acreage of this valuable forage-plant for bees; and as the years go on this acreage on cultivated land will be increased by the self-sowing that is bound to take place along the roads and fences.

We find that there are fields in our locality where there has been no sowing of alsike for the last ten years; yet the plants from constant self-sowing are scattered all over. It comes up in timothy fields and pastures, and it is this self-sowing that justifies the policy of furnishing seed free and at half price for a few years until alsike is as abundant as white clover.

A comparatively poor locality can in this way be made a very good one. The local farmers come to see the value of the plant from their own standpoint; and in time, without encouragement, put it in with their timothy.

If we can get farmers educated to doing this, our location east of the Mississippi will become immensely more profitable and certain; for it is a well-known fact that some seasons, when white clover fails, alsike makes up for the deficiency. When both alsike and white clover yield, the season is called a "hummer."—Ed.]

SHIPPING HONEY SIGHT DRAFT WITH BILL OF LADING AT- TACHED.

BY LOUIS SCHOLL.

An interesting editorial that, on p. 72. While sending honey in *carloads*, c. o. d., may be far from satisfactory, it should not discourage the shipper who sends out his honey in small lots from doing so. From an experience of many years in shipping honey in less than carload lots we have made it a custom to make all shipments sight draft, bill of lading attached, subject to examination. We have found that this is the *only* absolutely safe way for us. Consequently we have made it our *rule* from this season on to do business in this and no other way, with very few exceptions. We have had to do this because we have been disappointed a few times, not so much by people whom we did not know, but by several whom we trusted as old-time friends. In the last two seasons' shipments we lost only two accounts for honey, and both from old friends and bee-keepers, just because we trusted them with open shipments.

It is an easy matter to guard yourself against the loss of your honey shipments by the c. o. d. way. We write out all of our bills of lading and sight drafts, ship our honey, sign the bills, and bring them to the bank. If the honey is refused for some reason, which is seldom, the bills are returned by the banks; and using the bills of lading returned, the refused honey is reshipped to another point, generally near the place where it was refused. This saves having the honey returned, and we do not lose ownership of it until the honey has been paid for at the bank, which must be done before the shipper's order bill of lading can be obtained.

New Braunfels, Texas.

[For small shipments the C. O. D. plan is all right.—Ed.]



From "The Living Plant."

THE SKUNK CABBAGE.

This plant is valuable in many localities as a source of very early pollen.

THE SKUNK CABBAGE.

Its Value as a Source of Early Pollen.

BY G. M. DOOLITTLE.

Almost the first if not the very first thing in vegetation to appear above ground in early spring is the skunk cabbage, and I want to tell the readers of GLEANINGS something about this plant which always has been very interesting to me, especially because it is the source of the earliest pollen. If the younger people of the GLEANINGS family, who live in sections of the country where the skunk cabbage has gained a foothold will take the pains to go out in early spring into any low or marshy lands, which are the places in which the skunk cabbage thrives, they can readily find it, as these "fairy houses" stand about two to three inches high, point up, the same being much variegated in color. The main color of these hoods is a purple ranging from very light to very dark, with stripes of yellowish brown mixed in, these colors being arranged in stripes and "splotches," very much like the skin of the Northern Spy apple. The hood is very hard and tough, as well as unyielding to pressure, until enough force is given to break it, and no one, not knowing what it was, would ever mistrust that the thing had life in it, and much less believe it [was the "posy-bed" of the skunk cabbage until the house was broken open, when the secret would at once be out, for the perfume of the broken house is three times as strong as that from the bruised leaves which, later on, come up around this house, and so forc-

ibly remind us of the animal from which it derives its name. The opening is a sort of slit in the tough hood covering the flowrets, some of these "doors" being so nearly closed that the bees can not get in. I have seen two and three bees making a desperate struggle to squeeze in through this opening through which they could see and smell the pollen, while the aperture would not admit of their entering. However, the most of these hoods or coverings are fairly well open, so that they admit the bees freely.

Around nearly all of these plants is generally a mossy substance, although those which grow on higher land do not have it so plentifully. Underneath, snuggled down, and mixed with this mossy substance, is often found several somewhat elongated, pea-like-looking things, of a dark-brown color. These are the little bulbs for producing more skunk-cabbage plants; and in early spring, or during a thaw in winter, after the action of the frost has loosened them from their beds, and the thawing about them made them easily movable, they are carried off and scattered about by any and every freshet, and thus the plants are propagated from these bulbs, very much as are the wild turnips of our woodlands. Each flowret ball which is inside of every hood has from twenty to thirty little knobs on its surface. This ball is about as big as a fair-sized marble, and at each of these little knobs a little spikelet comes out, which is about three-sixteenths of an inch long, on the top or outer extremity of which the pollen-bearing flower grows. These little flowers are not over one-sixteenth of an inch in diameter, and of a lemon color, while the spikelets which hold them up and out from the little

ball are scarcely larger in diameter than a hair. To obtain the pollen the bee must go in through the door and then run or crawl about the spikelets, and between them and the hood, which, as a rule, gives hardly space enough between, so that the bee comes out pretty well covered over with the pollen, which is carried into the hive more largely on the back than in the pollen-baskets. The bees must get the pollen into their pollen-baskets without taking wing, in very much the same way that they manipulate propolis gathered from an old hive standing in the sun. I have seen as many as seven bees in one of these little houses, all kicking and rolling about till they looked more like small caterpillars in a flour-barrel than they did like bees.

The great value of the skunk cabbage is that it comes so early, for the very first warm days bring it above the ground, and the flowers in blossom. Then the hoods being of such a dark color, and right down in the moss on the ground, with only just the one little "door," makes it so comfortable for the bees inside that they are not chilled on cool or partially cloudy days, as they often are when working on the alders and willows later on, so they can go and return in safety at times when thousands are chilled and lost later on in the season, with the same degree of temperature. I have known bees to work on skunk cabbage with the mercury standing at 42 degrees in the shade, while a regular business would be made of pollen-gathering from this source at 45°. Immediately, as soon as this pollen comes in, the queen begins to "spread herself" at egg-laying, and the prosperity of all reasonably good colonies is assured. For this reason I value the skunk cabbage more highly than any other pollen-yielding plant or tree.

I never could find any trace of honey from skunk cabbage. So good authority as our pioneer in bee-keeping, Moses Quinby, in his "Mysteries of Bee-keeping" (p. 78), says, speaking of skunk cabbage with other pollen-producing flowers, "These afford only pollen," and I have found Mr. Quinby more nearly correct than the most of our writers on apiculture. The time of blos-

soming of this plant in this locality is from March 20 to April 15, according to the season, the bloom lasting from three days to a week, just in accord with the weather, and there is nothing with which I am acquainted that is so eagerly sought by the bees, and nothing in the pollen line which so greatly stimulates brood-production.

Borodino, N. Y.

THE ORANGE COUNTY PARADE OF PRODUCTS.

Bee-keeping Represented in a California Carnival.

BY ROY K. BISHOP.

Instead of a fair, Orange Co., California, celebrates by a street carnival known as the "carnival of products," or parade of products. In this parade, which takes place in the county-seat (Santa Ana), each industry is represented by a float—for instance, oranges, lemons, peanuts, celery, and many more. The engraving represents the bee industry of our country, which is of considerable importance. The object was to show as much of the work of the apiary as possible.

John Oderlin, who has been engaged in bee-keeping here for 30 years, is the driver—in fact, was the master of ceremonies. The one with the veil, Mr. Ellis, is taking off the honey, while R. K. Bishop is running the extractor. Frank Maag is folding sections.

In this county there are about 5000 colonies. The chief sources of honey are the black and white sage. We have some honey from the following, though not enough to give big extractings, except oranges: Phacelia, fillaree, alfalfa, mustard, sunflower, sumac, eucalypts, and oranges. In the mountains there are various shrubs that yield some honey that is utilized to build up on. In the valley where my bees are located we have now a very good flow from *Eucalyptus globulus*, and the bees are storing quite a bit more than they need for brood-rearing. Oranges begin to bloom the first of March.

Orange, Cal.



"FLOAT" REPRESENTING BEE-KEEPING IN THE ORANGE COUNTY INDUSTRIAL PARADE, CALIFORNIA.

SHEDS FOR APIARIES.

A Low Permanent Structure to Protect the Hives in Winter.

BY MILTON F. SMITH.

I have been interested in the keeping of bees for the past forty years, and have tried all manner of ways of keeping colonies over the winter in the most successful way, for our winters are sometimes very severe. At last I found a way that is quite successful. It is shown by the engraving. The shed is substantially built, and is stationary. It is long enough to pack comfortably about 25 or 30 hives. It is built high enough to hold two tiers of hives, but this has not proved successful; for during warm days of winter, when the bees are flying, they too often become confused, and do not find the proper hive, and are lost.

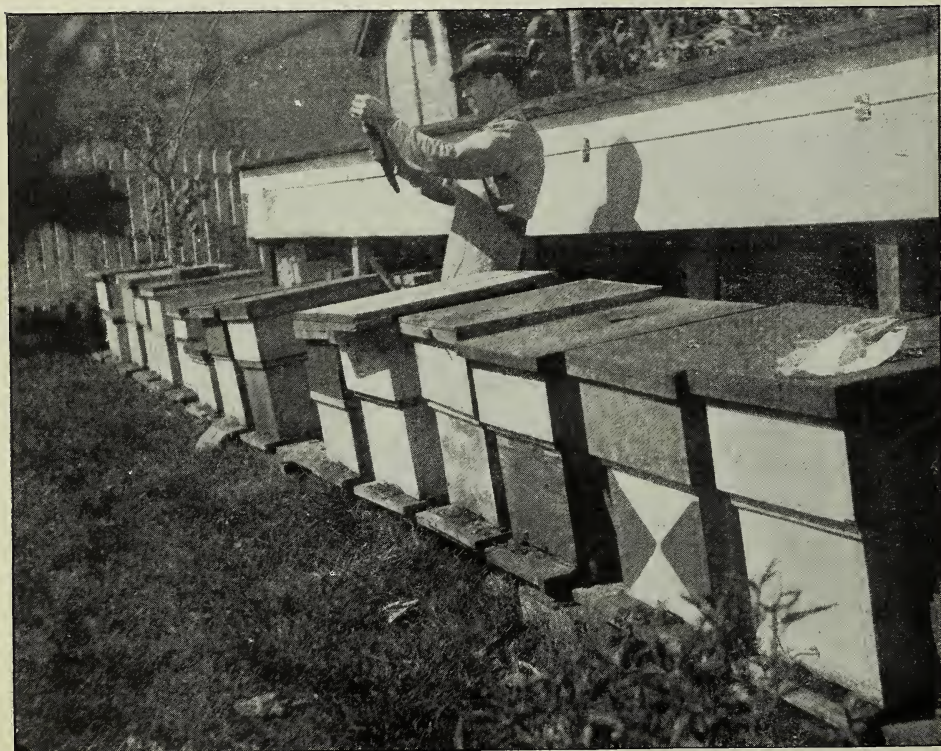
In packing them for the cold weather of winter I use any thing that is dry and warm, usually coarse sawdust, and planings—that is, fine shavings that I get from a cigar-box factory next door. I put this all around both sides, top and back, even packing down the front, for I have movable doors for the front of the shed. I have also arranged that on warm days (that often come in the middle of winter) I can easily remove the lower board of the front and allow the bees free-

dom. In this way I have kept my bees over very severe winters without the loss of a single colony. Last fall I had a number of very weak colonies. I fed them sugarsyrup early in the fall, and packed them for winter in due season. This spring every one came out good and strong.

When I have more colonies than the shed will hold I put them in a movable shed that I have made for this purpose. It is so arranged that I can put it away in the summer, out of the way of other things. Each side, roof, etc., is made to pack away flat—a sort of take-down arrangement. It is put together in a moment by means of hooks. The main shed is so arranged that the back part can be taken off in the summer, and this gives the bees perfect freedom and air; but I usually move the hives out a few feet in front of the shed, as shown in the cut, to give me more freedom for handling them.

Bees may be packed for winter in different ways; but it has been my experience that it is more important to have the hives kept dry than warm. One winter I had a lot of corn fodder, and put enough around to keep out all wind and cold; but the snow and rain fell upon this pile of fodder and made it damp and wet, and the result was any thing but encouraging. This is the fault with a cellar. Most cellars are warm enough, but they are too damp.

Red Lion, Pa.



SMITH'S PERMANENT SHED.

The hives are set forward in the spring so that the shed is not in the way.



AN APIARY ON THE ROOF OF A WOOD-SHED.
From four colonies, 300 lbs. of honey was taken.

BEEES ON THE ROOF OF A WOOD-SHED.

300 Pounds of Honey from a Space 7 Feet Square.

BY PERCY C. SHERMAN.

For some time I have owned a couple of colonies of bees, but have done very little with them. We have no ground space for them, and, besides, we live in a double house with a neighboring house within 20 feet of us. Though such conditions are unfavorable for bee-keeping the thought of putting the bees on the roof of a wood-shed occurred to me; and, though the idea was laughed at, I built some framework and placed upon it my two hives with two additional.

Though the bees were just over the door, as shown in the picture, the only time they give us any trouble was after I had robbed them. Then they would be "numerous" for a short time.

I reached the hive by way of an apple-tree close by, or through the window above, in which the screen shown was hung on a hinge.

From this roof I took about 300 pounds of honey from four hives (quite good returns from a roof 7 feet square, ordinarily considered useless for producing anything.)

Adrian, Michigan.

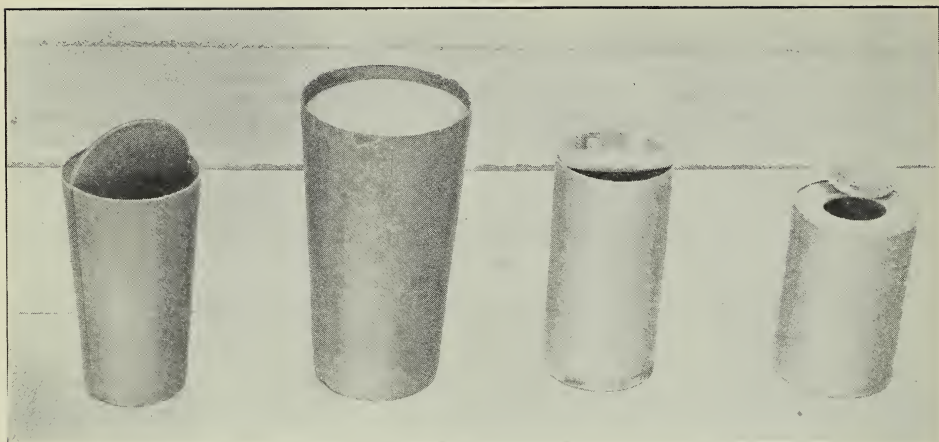
[Bee-keeping, unlike poultry-keeping and a garden, is adaptable to almost any circumstances. There are many small apiaries in our larger towns and cities located on roofs of the buildings or in the small back yards. In almost all cases of this kind fair returns are secured. The experience as above given is no exception.—F. J.]

PAPER BOTTLES FOR EXTRACTED HONEY.

Can Paper Milk-bottles be Used for Holding and Shipping Honey?

BY J. E. CRANE.

For years I have been looking for a practical package, costing not over a cent, that would hold a pound of honey. I have recently found such a package, but it holds more than a pound, and can be had for half a cent. I refer to the paper bottles used now for milk. It seems to me that these will answer as well as tin, and they can be sealed more quickly and safely than almost any glass container that I am acquainted with. Think of a box containing two dozen packages for honey in a re-shipping-case, for 25 cents! I believe that these packages would answer where tin is now used. They are used very extensive-



DIFFERENT FORMS OF PAPER MILK-BOTTLES WHICH MIGHT BE IMPROVED SO AS TO BE USED FOR HONEY.

ly in the milk business, and, of course, are given away with the milk. I believe they could be used for honey just as well.

The bottles are made of strong spruce paper, glued and paraffined. They would be especially useful in retailing honey from house to house, or for holding candied honey, as it could be run into these bottles before it is hard. The cover could be left so as to be easily removed, so that the honey might be tested if desired. The illustration shows several forms of these packages.

While these bottles might not be very valuable for shipping honey, I feel sure that they could be improved so as to be practical. Possibly they would have to be made thicker for honey than for milk. The ends should be put together with glue, and only the inside paraffined, while the outside should be covered with a nicely printed label. In the end the cost might amount to a cent each; but even this would be much cheaper than tin.

Middlebury, Vt.

[We believe this paper milk-package is a good thing. There is no reason why it should not be used very largely by those who do a retail business in extracted honey. It is by far the cheapest self-sealing package on the market; and, what is more, it can be obtained almost anywhere. Apply to your milk-dealer.—Ed.]

the action of frost, which is chiefly confined to low ground and heavy clay soil. However, new seedings of all the clovers are frequently killed by a severe drouth early in the season before the roots have become thoroughly established. While the drouth was very severe in this section, and continued well into November, it did not begin in earnest until August.

I have just been over our nine-acre field of new alsike and red-clover seeding for the second time since these articles began to appear. We have a fine stand of clover, with the exception of a few of the highest places. That white clover is severely injured in pastures and high places is very evident. However, in meadows, along roadsides, and in out-of-the way places, where the plants were protected by overlapping foliage, there is enough white clover in sight in my location, with the splendid outlook for alsike and red clover, to give us an average crop in 1909, especially if we get a lift from basswood, as we generally do.

The prediction that there will be no clover honey east of the Mississippi has no foundation for its support, and reminds one of some weather prophets who foretell the weather a year in advance. There were local showers here and there, all over the country, and it is quite possible that many bee-keepers may by moving their apiaries a short distance secure a good crop of honey.

Birmingham, Ohio.

CLOVER-HONEY PROSPECTS OF NORTHERN OHIO FOR 1909.

BY J. E. HAND.

White clover is practically a surface feeder except the original plant, which dies after it blossoms the second year. The runners do not have tap-roots, and are, therefore, unable to survive a very severe drouth. On the other hand, red clover, after it once gets firmly rooted, is seldom killed except by heaving out of the ground by

[Many who have written us seem to feel that white clover, even though it has no tap-root, will stand more drouth than those clovers that have a tap-root and a bunch of rootlets in one spot. The white clovers branch and rebranch, and at every intersection have a bunch of roots. The fact that one plant may have so many sets of roots in different spots is regarded as a protection that the other clovers with only one root or set of roots do not have. For instance, The A. I. Root Co.'s plant is strong because it has so many branches and rootlets. These latter, you know, feed the old plant with constant new life.—Ed.]

WIRE-CLOTH SEPARATORS.

Another Bee-keeper Who Believes that this Form of Separator has too Many Advantages to be Neglected.

BY H. H. ROOT.

Mr. W. C. Sorter, of Wickliffe, O., has been experimenting for several years with wire-cloth separators. He has found that they are quite expensive, but, at the same time, he believes that they have a great many advantages. Fig. 1 shows different forms of separators that Mr. Sorter has tried in the effort to produce a separator that would hold its shape and yet not cost too much. He believes that, if the manufacturers of wire cloth could be induced to incorporate a stiff wire on both sides of a strip just wide enough to make separators, the problem might be solved. He thought that possibly something in the nature of a heavy wire combined with a salvage edge might be obtained at no great expense.

The principal advantage of the wire-cloth separator, as Mr. Sorter looks at it, is that the sections may be filled more rapidly, and that each section is filled fuller than those between any other kind of separators, so that it contains an ounce or two more honey than the same size of section used with the average separator. It has been found that the bees bring the cappings of the comb closer to a wire-cloth separator than to either the solid or slatted form. To prove this Mr. Sorter showed us several sections filled between combination wooden-slat and wire-cloth separators. Fig. 2 shows two of these sections, also the particular style of separator just beneath that was used. It will be noted that these are 4x5 sections, and, of course, in the supers they stand on the ends rather than on the sides, as

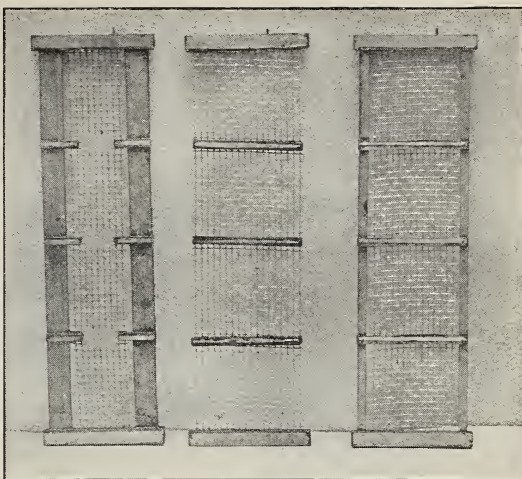


FIG. 1.—DIFFERENT FORMS OF WIRE SEPARATORS USED BY W. C. SORTER, WICKLIFFE, O.

shown in the engraving. The combs were bulged slightly in the middle, which part was covered only by the wire cloth. That part of the comb nearest the tops and bottoms of the sections was not built out nearly as close to the edge of the section. The same results were secured in all supers where wire-cloth separators were used; that is, the sections were filled fuller, so that they weighed an ounce or two more. The combs were not bulged enough to go beyond the edge of the section, but were built out a little fuller than those in sections divided by the regular slatted separators or fences. With separators made wholly of the wire cloth, the whole comb is uniformly thicker.

Some objection has been made heretofore because the bees attached combs to the wire cloth; but Mr. Sorter says that, although once in a while he has noticed combs attached to the wooden slats, he has never seen them attached to the wire cloth, and he thinks that any trouble from this source would be very slight.

Of course, the wire-cloth principle as applied to separators is not new. It was made the subject of a patent by N. N. Betsinger, in the early 80's, and in later years has been used with much satisfaction by S. D. House, of Camillus, N. Y. Mr. House reports that sections are better, plumper, and more evenly filled behind wire-cloth separators than behind any others — exactly corresponding with Mr. Sorter's experience.

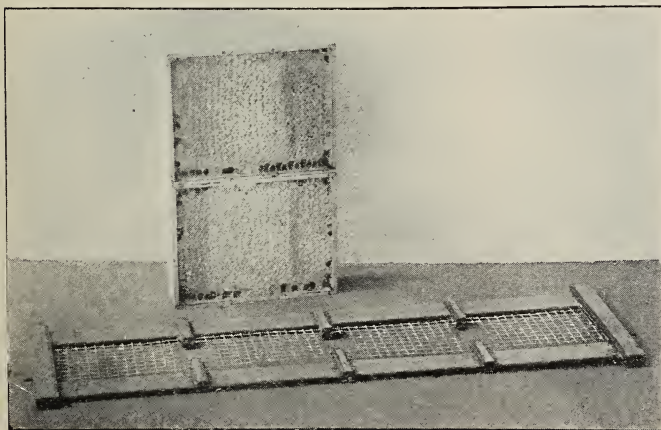


FIG. 2.—COMB HONEY PRODUCED BETWEEN WIRE SEPARATORS.

It will be noticed that the central part of the comb, which was covered only by wire, was considerably thicker than that near the top and bottom covered by the wooden slat. This shows that sections filled between the wire separators will contain more honey than those between ordinary separators.

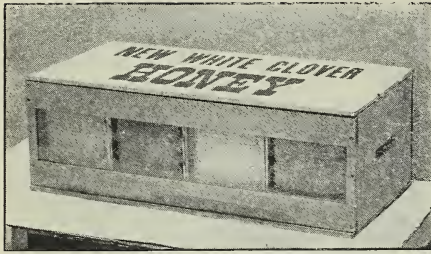


FIG. 3.—SORTER'S PLAN FOR HELPING THE GROCER ADVERTISE HIS HONEY.

On the under side of the covers of the shipping-cases paper is pasted containing the words as shown.

The reason that they are not more generally used is the expense.

In this connection it may be well to call attention to an ingenious scheme which Mr. Sorter has for advertising. On the under side of the covers of his shipping-cases he pastes a large white paper on which is printed the words "New White-clover Honey," in large black letters. When the grocer removes the covers from the shipping-cases he turns them over and has a very neat display card, so to speak, in order to attract the attention of his customers.

It is interesting to note, also, in Fig. 3, the different color of the honey shown back of the glass. The two darker sections were filled with golden-rod honey, and were left on the hives longer than necessary until the cappings became quite yellow. The photograph exaggerates this difference in color somewhat, but nevertheless the two shades are far from being alike. There is as much difference between travel-stained and white comb honey as there is between shop-worn and fresh goods of any kind. The strain of bees, the source of the honey, the type of separator used, and the length of time that the honey is on the hives, are all factors that control the color of the cappings.

CATALPAS IN OKLAHOMA.

BY N. FRED GARDINER.

The photos which accompany this article aptly illustrate some of the possibilities of our new State. There is scarcely a line of business activity to which Oklahoma has not some unusual attraction to offer. When trees like the ones in the picture can be grown in such a short time, it is evident the land-owners can do much to postpone the impending lumber famine if they can be aroused to the occasion. It also indicates that soil that will produce such growth will grow nectar-producing plants, so that bee-keeping can not be altogether a failure.

The trees shown are catalpa, and are four years old from seed. The individual tree is over 15 feet high, and more than 4 inches in diameter a foot above ground. This is about an average specimen of the 75 trees surrounding my grounds. The first season's growth was about a foot. They were then set where they now stand, and many



CATALPA-TREES IN OKLAHOMA, FOUR YEARS OLD FROM SEED.

Courtesy Oklahoma Farm Journal.

were over 8 feet high at the end of the second year's growth.

The wind does not cause these trees to incline from the perpendicular as it does many other varieties; but they grow perfectly straight. They are being grown to build a permanent fence, and they can soon be utilized for this purpose. Clean culture has been practiced at all times, and the dust mulch maintained.

Geary, Okla.



RAPID GROWTH OF CATALPA-TREE, FOUR YEARS OLD FROM SEED.

Courtesy Oklahoma Farm Journal.



DEADMAN'S CONCRETE RUNWAY LEADING DOWN INTO THE BEE-CELLAR.
Ordinarily this runway is kept covered with a light roof made in two sections so as to be easily removed.

A PNEUMATIC-TIRED HIVE-CART.

BY G. A. DEADMAN.

The cart here shown is especially adapted for taking colonies to and from the cellar, although it is very handy for many other purposes as well. I have had it in use for two seasons, and I find it very valuable; for with it I can carry the bees from the cellar alone with a great saving of time, and I am always less tired than I used to be when carrying out the colonies in the ordinary way with a helper.

As to the construction of this cart, I will say that it is simply a framework 5 feet long, clamped to parts of two old bicycles, as shown. This framework is wide enough so that, when the hives are placed on it, they will not project so as to interfere with the hinged sides which fold up to prevent the hives from sliding off. End pieces are also hinged to the framework in the same way. Both the sides and ends are held up by means of hooks and staples.

The floor of the framework—that is, the part on which the hives rest—is made of two $\frac{1}{2}$ -inch boards about 5 inches wide, padded on the top. These can be easily removed should the cart be needed for some other purpose.

The forks of two old bicycles are firmly clamped to the framework with $\frac{3}{8}$ -inch bolts. These forks of bicycle frames can be bought for about the price of old iron, since it is only necessary that they hold the wheel firmly.

This construction is very simple and inexpensive, especially if one has two bicycles, for then it is not necessary to buy old front wheels for the cart since those on the bicycle can be used, the change being made in a minute or so. The season for bicycle-riding is usually about over when the bees are placed in the cellar, and has not yet begun when they are taken out in the spring; but the change can be made so quickly that, in case the cart is used during the summer, very little time is needed to take the wheels from the bicycles and attach them to the cart.

If quick detachable tires are used they can be quickly repaired in case of a puncture. The

wheels are, of course, ball bearing, and therefore turn very easily. I can carry three hives at a time with very little exertion.

If the apiary is far from the cellar, a hive-cart might be advantageously used, even if it could not be taken into the cellar. As I keep fruit and vegetables also, in one part of the cellar, I constructed a concrete runway leading down into the cellar so that I can run the cart up or down. This runway is easily built, and costs but little more than ordinary steps. The roof or cover for this runway is in two sections, for convenience in handling, and is made of light material, covered with paroid roofing paper. The cellar is about 4 feet below the ground, and the length of the runway 18 feet.

I have found my hive-cart also valuable when unloading colonies at an out-apiary, when I do not dare to drive a team close to it.

With several out-apiaries there could be a



DEADMAN'S HIVE-CART MADE OF THE FRONT FORKS AND WHEELS OF TWO OLD BICYCLES.

framework at each yard so that the same set of wheels would do for all of them.

Brussels, Ontario, Can.

DOUBLE-TIER SHIPPING-CASES.

More Arguments in Their Favor; Why the Double-tier Cases are Easier to Handle.

BY DR. C. C. MILLER.

On page 120, Mr. Editor, you have evidently tried to discuss the matter of double vs. single tier cases in a spirit of fairness; but the last word has not been said, and it is so important to decide just what we do want that it is worth while to take up more space with the discussion.

You don't "quite see the force of the argument in No. 1." If Mr. Foster will pardon me for butting in, I'll try to "show" you. The hand-hole may be just as near the top in one case as in the other. In the shallow case it is in the center (measuring from top to bottom), hence at the center of gravity. So in handling the cases rapidly there must always be more or less effort on the part of the fingers to retain the case in a horizontal position, and that constant effort tires. In the double-tier the hand-hold is above the center of gravity, hence no trouble. That, however, is not the most important thing.

You can lift a much heavier weight close up to you than you can at arm's length, can't you? And it's much harder to lift the same weight at arm's length than close up. The further off the weight, the harder the lift. Very well. Don't you see that the hand-hold of the shallow super is further from you than that of the deep one? So it is possible that Mr. Foster is right in saying you will be twice as tired handling a carload of shallow cases as you will handling a carload of deep ones.

No. 2. "Why should any one try to pick up a shipping-case by the corners?" Well, why should they lay a double-tier case on its side, as you say they may? But "there's a reason" for the corner handling. It's easier, especially if two are carried at a time. Try it and see. Then, again, in loading a car it often happens that A hands the cases to B. If A lifts the case by the hand-holds, did you ever see B take hold the same way?

No. 5. A single-tier case on a show-case "would be less liable to break a glass than a double one of the same weight." Why under the sun should you pile any thing of that sort on the glass of a show-case? That glass is meant to be seen through, and not to be covered up. I never before heard of piling honey on the glass of a show-case.

"The single-tier can be piled up with less danger of toppling over than a double-tier." Is there any danger of either toppling over? I've piled dozens or hundreds of piles as high as I could reach, and there never seemed any danger.

That dray business. I don't see why one kind should be put on the bottom more than the other; "and if heavy goods of miscellaneous shapes and sizes were piled on top, more damage would be received" by the single than by the double

tier, I am sure; for the same reason that you say "that if one steps on the single-tier case his weight would do more damage to the sections in such a case than to those in a double-tier of the same capacity."

"Careless freight-handlers have a tendency to lay the double-tier on its face." I can't think of any answer to that that is entirely satisfactory. To be sure, the fool that would lay a case on its face would chink in single-tier cases face down if there happened to be a narrow place for them; but he wouldn't be likely to put a whole load of single-tiers face down. And that very thing happened to a load of double-tiers for me once. But the railroad paid for them, so I was nothing out. Say, come to think of it, that's an argument, after all, in favor of double-tiers. Ship all honey in them; let them be loaded face down, if need be; then collect. Make good honey that much scarcer, and stiffen the price. Great scheme.

A strong argument in favor of the double-tier has not been directly mentioned, although you, Mr. Editor, refer to it indirectly. It is that it will cost less to case a ton of honey in double-tiers than in single-tiers.

But the strongest of all arguments in favor of double-tiers has not been given, although I think Mr. Foster had it in mind in No. 4. It is the greater beauty of a *pile* of honey if in double-tiers. You've got to see it to appreciate it; but if you had a pile of single-tiers side by side with a pile of double-tiers, a single glance would settle it. I can't show it to you in words, but I may give you a little idea of the difference. You see, in the double-tier cases there is a middle bar of wood an inch wide. In place of that will be in the other pile the wood at the lower part of one case and the wood at the upper part of the case below it— $2\frac{1}{2}$ inches of wood in one case against one inch of wood in the other—more wood showing in the single-tier pile, more glass in the other. I wish, Mr. Editor, you could see the two piles side by side, and see how much more woody the pile of single-tiers looks.

Marengo, Ill.

BUCKWHEAT CAKES LIKE MOTHER USED TO MAKE.

BY EUGENE SECOR.

On page 40, Jan. 1, Mr. Barnes wants a recipe for making buckwheat pancakes. I am glad he acknowledges that the pure-food law in Iowa means something, in that it enables him to get unadulterated flour. I have evidence of that fact also. We are using, this winter, buckwheat flour which is just as good as we used to have back in York State. It has not always been thus here in the West. I may be permitted to say, parenthetically, that there is not so much *stuff* on the market here called *honey* as there used to be, either.

When I read Mr. Barnes' query I inquired of the women I board with how they prepared the batter for pancakes. This is what they said: To start the batter for a family of four we use about a pint of sweet milk to two cups of flour, and warm water enough to make the batter thin, and about one-fourth of a yeast cake. Mix the day before needed, and keep in a gallon jar be-

hind the stove, to sour. In the morning, when pancakes are wanted, pour out most of the batter into a shallow pan, but always leave enough in the jar for a starter for next time. Thin the batter before using, if necessary, with warm water. Milk is better to mix with over night, because the pancakes brown nicer if milk is used. Use half a teaspoonful of soda each morning, or enough to sweeten the batter sufficiently, stirring rapidly. Mix batter in the jar over night, always using milk if possible; and it may be well to set the jar in a pan or something to catch the overflow, for if the batter rises as it ought to it may climb over the sides before morning. When it does that you may be sure it is all right.

The pancakes may not be just to the taste the first time, as it takes a day or two to get the growth of the proper bacteria. When the batter in the store jar gets just right it ought to remain so all winter, with perhaps a little yeast added occasionally, if the batter doesn't rise nicely. It isn't necessary to keep it behind the stove all the time after the culture is started and is satisfactory.

One may use all buckwheat, or part wheat flour if he wants to make the buckwheat flour go further. You know what the song says:

Make the batter runny;
Cook 'em quick, and bring along
Lots of cream and honey.

Did you ever try *cream* and honey on pancakes instead of butter and honey? If not, suppose you try it. Of course, this is assuming that you live in the country where real cream grows, and not in town where it always seemed to me that milk is so homesick it has the blues.

We eat honey at our house. Whether it is because we have something good to eat it on, or because it doesn't cost any thing, we somehow get away with about a pound of comb honey a day the year round in a family of four. And then with two families of grandchildren, and some other friends who have appetites for Nature's most delicious sweet, we do our part toward relieving a glutted market by eating a lot of our own product and by creating a taste for honey in others.

Buckwheat cakes and honey! How they make me forget the discomforts of winter, the biting cold, black diamonds, steaming furnaces, fur coats, and mufflers! They feast my imagination with the sight of opening orchards of pink and white—resurrected in beauty out of the once dead cold earth. They carry me back to the fields fragrant with clover-blossoms and musical with the hum of bees. I hear the songs of nesting birds and the patient cropping of contented cows. They suggest the pendent creamy cups of flowering lindens, inviting nectar-loving *Miss Mellifera* to share the proffered hydromel while the sun of opportunity shines. They open the door of memory, and show me whitened landscapes of blooming buckwheat that fill the air with sweetness and the heart with hope of a coming harvest.

Ah, buckwheat cakes and honey! Not only does the sissing griddle sing of the poetry of country life, but they twain (buckwheat cakes and honey) give pleasure to the palate, health and strength to the body, and sweetness to the spirit.

Forest City, Iowa, Jan. 12.

[Hon. Eugene Secor was once the efficient General Manager of the National Bee-keepers' Union, and later called the National Bee-keepers' Association, as it is to-day. He has also written various poems on bees and other matters, some of which have been set to music and sung at our National conventions. We are especially glad to hear from him again.

Here is another recipe that our women folks say is a good one, and we reproduce it here.—Ed.]

RAISED BUCKWHEAT CAKES.

Take a small crock or large earthen pitcher; put into it a quart of warm water or half water and milk; one heaping teaspoonful of salt. Then stir in as much buckwheat flour as will thicken it to a rather stiff batter. Lastly, add half a cup of yeast. Make it smooth; cover it up warm to rise over night. In the morning add a small level teaspoonful of soda dissolved in a little warm water. This will remove the sour taste, if any, and increase the lightness. If allowed to stand until it bubbles there will be no use of putting the yeast in the batter.

JESSE W. THORNTON.

North Yakima, Wash.

HONEY PRICES.

The Lack of Intelligent Co-operation is to Blame for Low Prices.

BY SEBASTIAN ISELIN.

I have read with great interest the remarks of Mr. Roy Stevens in regard to the San Francisco quotations on page 67, Jan. 15, for I am the man who put that honey on the market, which was re-tailed at 3 sections for 25 cents. Oakland and San Francisco commission firms refused to offer as much as 6 cts. per comb for this honey, and so I sold some 1100 lbs. to a local retailer at 6 cts. The term "choice comb honey" is, however, somewhat misleading, since these 1100 lbs. comprised all the light weight and candied sections of a lot left over from 1907, the shipping-cases being returned to me. Although I know that it does not pay to raise comb honey at such low prices I was well satisfied with the deal.

As to the San Francisco quotations, I must say that of late they have taken a tumble, and now seem to be nearer the actual market prices than ever before.

Since New Year the market is flooded with white and light amber Nevada comb, which is quoted at 8 to 14 cents. I am of the opinion that, if the bee-keepers of Nevada were organized, and knew the conditions of the market, they could have obtained from 12 to 15 cents for this honey.

But it is not only in Nevada that organization and co-operation of the bee-keepers are needed. Those in the vicinity in which I live failed to put in an appearance at a meeting called for the purpose of organization some time last month, notwithstanding the fact that, as a rule, they are badly misinformed as to the prices prevailing. For instance, last summer at one time honey was so scarce here that I could easily obtain 13 cents

for the best of my dark comb, and was told to bring all I possibly could take from the bees, at that price. When I appeared on the scene again, somebody had just brought in a very fancy article of white comb honey and offered it at 10 cts. per comb, and I could not expect the retailers to pay me any thing like 13 for my much darker honey any longer.

Had the other party known the condition of the honey market he could have asked from 15 to 17 cts. for his grade of honey and could have sold lots of it at that price. Later in the season a bee-keeping farmer of my locality traded some honey for 8 cents (took its value in groceries), where I had obtained 10 cents in cash for a similar grade of honey, varying only in so far as mine was clean of propolis and dirt, and the other man's was not.

And, again, as I accosted the buyer of a grocery firm which has handled my honey on and off during a good many years, he said, "I am sorry, but your price is too high," showing me the price list of a city jobber, a firm which quoted: "Nevada comb, water-white, 12½; ditto, light amber, 8;" whereas I had asked 10 cts. for the best of my dark comb.

Thus I find the lack of co-operation among the producers of nature's noblest article of food apparent on every hand. When will the bee-keepers wake up and attend to the quoting of the markets themselves, instead of letting somebody else make the prices for them?

I regard it as highly desirable that we pay some attention to questions of this kind before we break our necks in trying to obtain larger crops from year to year, while honey, our product, is going a begging the country over.

Stockton, California, Feb. 11.

A NEW REVERSIBLE HIVE.

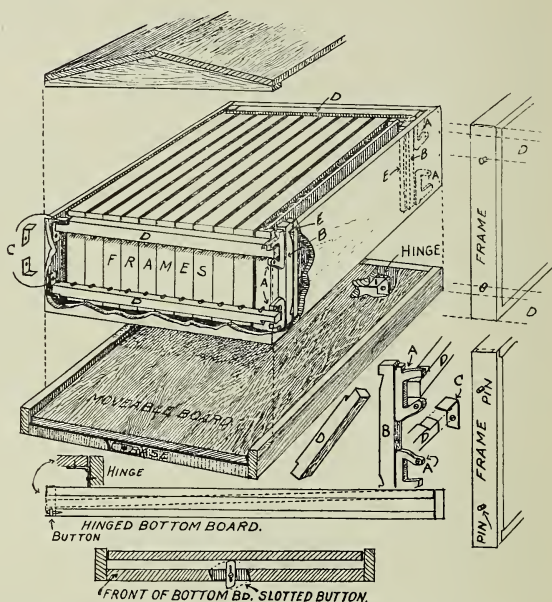
BY CHAS. HURST.

The illustration shows my reversible hive, to be used in connection with a comb-honey super. I think this hive is the easiest manipulated reversible hive now made, as the reversing can be done by lifting off the cover and reversing the body, frames and all, with one operation; and it is not necessary to reverse the hive back again in order to take out the frames. The reversing is done without disturbing any of the inside fixtures, and all is done so quickly that the bees hardly know it. I believe that a larger crop of honey can be secured by reversing at the right time.

The frames have two pins at a certain distance from top and bottom. In putting these frames in the hive the pins at the bottom of the frame rest on the holder D; then to lock the frames in one end of the frame-holder, D fits under the angle C; the hook A slips over the other end of the frame-holder D, and the piece of wood B slides

behind the hooks, and the frames are securely locked for reversing. The bottom-board needs no description except that it is on hinges at the back, and the front can be moved up and down to give any desired depth of entrance, and held in place by button and thumb-screw in front of the board.

Buffalo, N. Y.



HURST'S REVERSIBLE HIVE—PATENT APPLIED FOR.

A, small metal hook; two in the two corners of hive on one side. C, metal angle; two in each corner on opposite side. D, wood strips forming supports for frames.

[From 1882 on till 1885 the whole bee-keeping world (on this side of the Atlantic at least) was very much stirred up at the big possibilities that might accrue from reversible frames or reversible hives. All sorts of extravagant claims were made; and while there are advantages in having a frame reversible, there is but very little gained in having the hive made so. The chief advantage in reversing is to get the comb built clear down to the bottom-bar. When it is reversed so that the bottom-bar is up, the bees will fill in the gap by building the comb up to what is now the top-bar. After that it may be put back to normal position. There is another incidental advantage in that bees will sometimes, when the comb is reversed, carry the honey out of what is now the bottom, and deposit it in the supers; for it is against bee nature to store honey next to the bottom or entrance. We say *sometimes*, for they will not *always* carry it up. The hive above shown is similar in principle to the Danzenbaker patents. Instead, however, of using a double set of pins the Danzenbaker hive uses a single set. In another way the hive is like the reversible hive brought out by J. M. Shuck and patented by him in 1885. But of late years we have heard nothing of that hive nor of reversible

hives in general, although reversible frames are used quite extensively. We do not like to throw cold water on a correspondent's idea; but if history repeats itself, and it generally does, he will find that the slight advantage he will gain in a reversible hive will be more than offset by the expense of the equipment. There is so little real advantage in the reversible feature that it hardly pays to construct a whole hive with that end in view.—Ed.]

PRACTICAL INSTRUCTIONS FOR BEGINNERS.

The Selection of the Necessary Equipment.

BY E. D. TOWNSEND.

I would recommend that the beginner commence his bee-keeping career with the production of comb honey, and that all increase be made by natural swarms. Gradually the production of extracted honey can be taken up. I know it is generally considered that extracted-honey production is more easily learned than comb-honey production; and I admit that, if the beginner were to commence the season with half of his colonies worked for comb honey and half for extracted, the half worked for extracted honey would probably be the more profitable that season; but there are many pitfalls in the production of extracted honey not found in the production of comb, and the beginner might be the loser in the end if he produced extracted honey from the start. A part of the danger lies in the fact that, in producing extracted honey, much of the increase has to be made artificially. Besides this, one not entirely familiar with the business might allow more extracted-honey colonies to starve than he would comb-honey colonies, for the latter will have a good stock of the early or better quality of honey for winter stores. In the case of colonies run for extracted honey, on the other hand, the early and better honey is more likely to be placed in the upper story, which usually contains an abundance of comb room. It is true that sugar syrup could be fed to make up this deficit; but this would only add another burden, which the beginner had better avoid at the start.

All artificial-swarving methods should be avoided for the first few years until the beginner has more experience, and until some of the known principles are learned. After this, these other principles of bee-keeping can be taken up.

WHAT HIVE TO ADOPT.

If more comb honey than extracted is to be produced the first season, it will be necessary to buy rather more supplies. I assume that either the eight or ten frame hive will be adopted, containing frames of Langstroth dimensions. I again urge the adoption of the ten-frame hive, knowing that it has every advantage of the eight-frame and some additional good points besides. The hive that we would order is the regular Dovetailed hive for comb-honey production, having a reversible bottom-board made of $\frac{3}{8}$ -inch material. These bottom-boards are much superior to some that have been on the market in for-

mer years. We have used very similar ones for the past twelve years, and know that they are good. The super of this hive should contain $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ -inch plain sections and fence-separators. In my opinion, there is no better section on the market to-day than the $4\frac{1}{4}$ -inch square plain section.

If four good colonies of bees are bought the first season, and these colonies and the increase are to be put into new hives, about ten hives will be needed. There should be ten hive-bodies, ten covers, ten bottom-boards, and twenty supers; and all the inside furnishings should be included. The frames should be pierced, and the wire should be sent for wiring them.

If the supers are used as we use ours, extracting-frames will replace the outside section-holders in each super. These frames are made the same size as the section-holders, but they have a top-bar. Both top and bottom-bars are $\frac{3}{8}$ inch wide, the top-bar being $\frac{3}{8}$ inch thick, and provided with a beveled groove and wedge for fastening the foundation. These extracting-frames should be pierced for two wires, and full sheets of thin super foundation should be used in them.

As the supers, as ordered, do not include sections, 1000 $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ -inch plain sections should be ordered. One would probably not use a thousand the first year; but during a good year more than 500 would be necessary, and it is well to order sections in full packages.

For supplying these sections with full sheets of foundation, about eight pounds of the extra-thin super foundation will be needed.

Brood-frames should all be pierced for wiring. The piercing and the wire for wiring the frames costs about ten cents extra per hundred frames. Full sheets of medium brood foundation should be used, and it will take thirteen or fourteen pounds to fill one hundred frames. The use of starters in brood-frames is very poor economy. I have tried both starters and full sheets.

There is no better uncapping-knife than the Improved Bingham. We order them made one inch longer than the regular size, but very good work can be done with the knives of ordinary length. A Cogshall brush is very essential for freeing the combs of bees when extracting or at any other time.

It might be well to have two or three extra stories the same as the hive-bodies, for there are sometimes combs that are undesirable for use in the brood-nest, but which would be all right for extracting-frames. In this way, even if no particular pains are taken for producing extracted honey, some may be secured the first season. The second season, all extra combs from dead or queenless colonies could be used for extracting-combs. Then if shallow extracting-combs are used in the comb-honey supers, as I have recommended, by the second year, at least, quite an amount of extracted honey may be produced. In this way the beginner may be gradually drawn into the production of both comb and extracted honey until, before long, half of the yard may be worked for each. The amount of extracted honey can be regulated, however, for if more empty combs accumulate than are needed for extracted honey the swarms could be hived on them.

Remus, Michigan.

HEADS OF GRAIN

FROM DIFFERENT FIELDS

SEALED COVERS AND DRY CUSHIONS PREFERABLE TO ABSORBING CUSHIONS.

I have noticed the article by W. F. Cox, page 66, Jan. 15, and also the one by Mr. Doolittle, p. 51, same issue, about absorbing cushions. I hesitate to differ with such authorities as Mr. Dabant, for instance; but I have had cushions over my colonies for ten years, and I have never found any moisture on the frames when the clusters were up next to the cushions. I use a water-proof cloth between the frames and the cushion, and I provide only a small entrance, and a cushion of sufficient thickness to keep the heat from escaping upward. The bees naturally get next to the cushion because it is the warmest place in the hive, and not because the cushion absorbs moisture. If a colony is in good condition the bees sleep almost all the time, and there is scarcely any moisture condensed, because they do not breathe much. Colonies cared for as stated above never suffer for a flight in the winter, and never spot the hives, even when they do not take flights after long cold spells.

I could give much more evidence, if necessary, but I am sure that, whenever a bee-keeper gives the above plan a fair test, he surely will agree with me when I say that cushions do not absorb the moisture. If they did they would become cakes of ice, and the cluster would get down next to the entrance to keep out the cold. I keep the cushions on the year round, with the entrance contracted in the spring to protect the brood, and there is a good deal of advantage in this plan in the production of comb honey. B. D. HALL.

Royal, Ill.

[Where one uses water-proof cloth between the cushion and the bees he has a sealed cover. Over such, with a good roof, the cushion is bound to keep dry.—Ed.]

MOVING BEES SHORT DISTANCES ON WARM DAYS DURING THE WINTER.

Dr. Miller, on p. 74, Feb. 1, says that I ought to try shaking the bees in front of the hive after moving them that short distance (40 rods), and he adds that he has considerable faith in shaking for that purpose. Then the editor, in the footnote, says, "Good suggestion, and it will work too." Very likely it would work, but it would take longer, and would be more work. Then it would not be a good plan to break the sealed cover loose in winter, for we have some cold weather here. The last colonies I moved I smoked several times when I opened the hives, and very few, if any, came back.

After I wrote that letter which was published on p. 63, Jan. 15, I moved some more colonies on different days when there were many bees flying. One day I moved about 15 hives, and on another 35. Part of these hives were closed for half a day, and part opened as soon as set on the stand, and smoked immediately, then smoked twice more, allowing about 20 minutes between the smoking; and as there were no more bees at the old place I could tell that scarcely any bees

returned. Has any one tried smoking bees a number of times every 20 minutes to keep them from returning to the place they were taken from? Lytle, Texas. CAREY W. REES.

BEES MOVED SUCCESSFULLY FOR SHORT DISTANCES ON WARM DAYS IN THE WINTER.

On p. 91, Feb. 1, the editor informs S. Cheatham, of South Carolina, that it is not practical to move bees short distances in a climate warm enough for them to fly nearly every day during winter. Now, I know it would be folly to attempt such a thing in the summer when they are working regularly every day; but we have repeatedly moved single colonies, also entire apiaries, short distances during the winter in South Texas, and with no apparent loss.

On Jan. 1, 1907, we moved an entire apiary of 75 colonies a distance of 50 rods. The next day was warm, and I noticed a good many bees flying about their old locations. In a short time, however, every thing quieted down, and, returning to the new yard, I noticed several hives bringing in pollen. Later in the evening I examined the old location, and there were no bees on the ground or shrubbery, as there would have been had they not found their way back to their hive. We also moved an entire apiary of 80 colonies about ten rods in the winter of 1907, with good results, not a bee being lost so far as we could tell.

The first lot was moved on a wagon without springs, and, of course, were jolted considerably; but the last lot was moved by hand, and, consequently, did not receive much of a shaking-up. This was in Brazoria Co., where bees fly every few days during winter; in fact, they gather some pollen every month in the year. If a hive is left near the old stand a good many bees will return to it; but otherwise I think there will be no trouble. J. D. YANCEY.

Bridgeport, Wash., Feb. 18.

WINTERING IN A WARM ROOM.

In the last three numbers of GLEANINGS there have been articles regarding wintering bees in a warm room, and I notice a request for any experiences regarding the matter. On p. 118, April, 1908, *American Bee Journal*, in Dr. Miller's question-box, under the head of "Either Chunk or Section Honey—Interesting Experiment," you will find my experience with a small colony. I will add that it came out in the spring much stronger than in the fall. In June I introduced a new queen, and it was doing well until the drouth struck us, when it was robbed out.

CHAS. M. MUSGROVE.

Pittsfield, Mass., March 9.

Please tell me where I can get Bokhara clover and alsike seed. Which do you prefer? Newark, O. LEONARD ESSMAN.

[You will want both. The alsike seed can be sold to nearby farmers at a low price. See elsewhere in this issue how to handle alsike. Bokhara clover (sweet clover) has been advertised in GLEANINGS the last two or three issues. Sow in waste places, along railway tracks and roads. Requires no cultivation to do well.—Ed.]

OUR HOMES

By A. I. ROOT

As for me and my house, we will serve the Lord.—JOSH. 24:15.
Woe unto him that giveth his neighbor drink; that putteth thy bottle to him, and maketh him drunken also.—HAB. 2:15.

Dear friends of GLEANINGS and friends of temperance, I am praying that the great Father will send his Holy Spirit along with this Home paper in such a way that it shall do a great work; and this great work rests on the shoulders of you who have been reading my Home talks as much as or more than my own. This talk is mainly to the editors of the periodicals that go into the homes of our land daily, weekly, and monthly; and I am depending on you to get it before them, either by a personal call or by cutting it out and mailing it to them. If the same editor or publisher should have his attention called to it more than once, all the better. Now may God speed you in your part of the crusade to redeem the press of our land from the thralldom of the rum traffic. The following kind letter will open up the matter:

Dear Brother Root:—I am a bee-keeper in a small way; and in the twelve or fifteen years that I have been a regular reader of GLEANINGS I have received much benefit therefrom, and in no department have I received more than from Our Homes, edited by yourself. May God bless you, and give you wisdom to fight the evils which have attacked all along the line.

In the March 1st issue I find a letter written to you by Frank L. Platt in which he states that "the brewers and whisky retailers have cut the Toledo Blade (weekly) off their list because the said paper does not accept brewery or whisky advertising." Now, I should be much pleased if Mr. Platt's assertion were literally true; but I know he is mistaken or misinformed. My wife has taken the Blade a number of years, and it (with two or three others out of the dozen or so we take, including one daily) still caters to the brewery and whisky trade.

I send you a copy of the weekly Blade, dated March 4, in which you will find no less than four advertisements in the line referred to. As to the political part of the paper, I will make no statement, as the paper will show for itself. I am truly glad to know that Editor Platt is "trying to play the square game," and would to God there many more such editors.

Greenview, Ill., March 9.

J. T. BUCHANAN.

With the above letter came a copy of the Blade, and, sure enough, there are four whisky advertisements. I give below an extract from one of the four as a sample:

TWELVE-BOTTLE CASE FINEST WHISKY FOR ONLY \$5.00—EXPRESS PREPAID.

Send us \$5.00 and we will send you a case of extra special distillation whisky in 12 large full 16-ounce bottles, all charges prepaid to your nearest express station without marks to betray the contents.

By the way, does not the closing sentence of the above furnish a sufficient reason why any respectable home paper should reject such an advertisement? "Without marks to betray," sure enough! To betray what? The hellishness of their business. I confess I am surprised to find such things in the Blade. It has for years had the reputation of being not only "keen and sharp," but of "hewing to the line," not only regardless of party, but for righteousness and truth. I don't like to take back what I said about the "Lord being praised." Can't the management of the Blade help us out? Are not such advertisements "putting the bottle to our neighbor's lips"? Is it too much to expect that the Blade may turn over a new leaf, and stand out, like Joshua, and say, "As for me and my house," etc.? How many besides myself will undertake to write to the Blade in regard to the matter? Clip

this whole article from your journal and mail it to them, telling them respectfully your views about whisky advertisements. It doesn't take many such letters to bring about an investigation (if nothing more), as I know full well.

I stopped a Cleveland daily a while ago, and told our newsdealer I wanted a daily that would not advertise Duffy's malt whisky. About the third issue, there it was, right before my face and eyes again. If the Duffy people with their big pictures of aged people, whom they claim lived so long because of the daily drinking of Duffy whisky are not putting the bottle to their neighbor's lips then I don't know who are.

A few weeks ago the National Superintendent of the Anti-saloon League came down here to Southern Florida and made an address at St. Petersburg. He told us how Lincoln protested when he gave his consent to the tax on liquor. Said he, "Gentlemen, this thing you propose may prove a worse curse to our nation than the war that is now upon us;" but the financiers of the nation urged, and he finally consented, with the understanding it was only as a temporary expedient at that terrible crisis, and had the fairest assurance that it should be stopped promptly when the war was over. When the war was over, Lincoln had died by the hand of an assassin, and the whisky men and brewers were getting so rich it was put off and put off, until this present time. Are there not good men and women enough living now to demand that the sacred promise given our beloved president be, even at this late day, remembered and religiously kept?

Mr. Baker, during his talk, asked if any one could tell exactly who started the present tremendous wave of reform. Then he told us of the temperance literature and text-books the W. C. T. U. women put into our schools years ago. Said he, "The seed sown by these godly women has just now commenced to bear fruit by giving our nation a new generation of men and women who learned the truth in childhood from their schoolbooks." I wanted to add, "In spite of what we read about Duffy's malt whisky in the daily papers." He closed his address by saying that, right in that audience, sat a man who years ago had faith in Howard H. Russell and the Anti-saloon League. He then asked the man to stand up so the great audience could take a look at him. When I came to that very pretty little Florida city that night I felt like a stranger in a strange land; but before the audience had all left the church I felt almost as I do at the close of a bee-keepers' convention.

Florida has 46 counties, and 37 of them are all dry. There are saloons in only 15 towns and cities in the whole State. A map of the wet and dry portions can be had of the Florida Anti-saloon League. Jacksonville, Fla., since the map was made, and one town at least (Carrabelle), have gone dry. As a recent summing-up of what has been done in Ohio and Indiana, I give below a letter from Ernest and a portion of one from Wayne B. Wheeler.

Dear Father:—I inclose you the annual report from Wheeler. I think you will be glad to read it through on account of the fact that you are one of the officers of the State League, and, further, for the good news which it contains. This report, as you will remember, was written in January. The legislature has all but adjourned, and, as you will see, Wheeler's predictions that our county-option law would not be repealed have been made good.

I do not think there is any danger now of our losing any temperance laws we already have on the statute-books.

You doubtless noticed that counties are going dry in Indiana in lots of fives and tens. The legislature is disposed to repeal the county-option law of that State, and the House has already voted to do so. I can hardly think that they will attempt to repeat the action in the Senate; and if they do, it will be a big overturning of political leaders in Indiana two years hence. E. R. R.

Later.—The Senate refused to concur, so that the Indiana county-option law stands, and will stand, as the liquor people will never be able to muster up strength enough to defeat it after three-fourths of the counties go dry. E. R. R.

Mr. Root:—Permit me to submit herewith the annual report for the Ohio Anti-saloon League. The year 1908 was one of the most effective, inspiring, and successful in the League's history. It started with the great legislative contest for the enactment of the county-option law. The liquor interests, realizing the injury which such a measure would bring to their traffic, fought it with the energy of despair; but the legislature listened to the people rather than to the brewers' lobby, and enacted the law.

Four other measures were enacted at this same session of the General Assembly: 1. The bill preventing C. O. D. sales of liquor in dry territory, and the operation of clubs in dry territory where liquor was kept in private lockers; 2. A measure which prohibits any person under sixteen years of age from working in a brewery, distillery, saloon, or other place where intoxicating liquor is sold for beverage purposes; 3. The law known as the "Nuisance Act," which provides that, upon a second conviction, a place where liquor is sold shall be abated as a nuisance; 4. A law to prevent dairy milch cows from being fed from distillery slops and starch waste. It was of especial interest to Cincinnati.

PREPARATION FOR THE CONFLICT.

Following the adjournment of the legislature until Sept. 1, when the county-option law went into effect, every effort was put forth to organize the counties for the vote. The first elections were held Sept. 26 in Meigs and Warren counties. They voted dry by substantial majorities. Since then elections have been held in rapid succession until we now have 57 dry under the county-option law and 5 under other laws, making a total of 62 dry counties. We consider this the best "Christmas present" which the League could present to the people of Ohio.

Over half of the territory in the 26 counties that have not voted, or failed to vote dry under the county-option law, is dry under the municipal, township, or residence-district option law. Adding together all of the dry territory under these four laws we now have over 85 per cent of the geographical territory of the State without saloons, and over 60 per cent of the population.

FINANCIAL REPORT.

A great financial burden was placed upon the League by these local-option, legislative, and legal contests. The crisis was upon us, and we had to meet it, even though it was necessary at times to draw on the future. We believed that the people would respond if we did our part. The results show that we did what any sane leader ought to have done under the circumstances.

The amount raised for the League up to Dec. 1 was over \$80,000. The expense is within this limit. This is a substantial gain. In addition to this the temperance people have raised several thousand dollars for local work in these county campaigns. The public accountants will make their report on the books the first of the year, and we will mail a copy of the same.*

NEEDS FOR THE COMING YEAR.

Each year the needs of the League have grown with the progress of the work. We need two or three more men in the field at once—one more attorney and at least one more campaign speaker. During these contests we had to call to our aid men from other States, at considerable cost and inconvenience to the work. We are now coming to the counties with the large cities. That means we must have more workers, more literature, and a longer campaign of education. The same hard work that has won the elections in these 62 counties will win it in others; but we must have literature that can be read by foreigners, who thus far have not been reached by our present methods. With the experience which we have had, we believe a goodly percentage of this class of people can be educated to see the advantages of a no-saloon policy; but we must have the men, the literature, and the organization with which to do it. This means more money to carry on the work. We ought to have \$100,000 this next year for the aggressive campaign that has been mapped out. It is essential if we measure up to the possibilities before us. Your contribution made possible many of these victories, and we trust you will continue your partnership in and support of the work which is so rapidly redeeming Ohio from the curse of the liquor-traffic.

W. B. WHEELER,
Superintendent and Attorney.

* This has now been done, and the audited accounts are now in print, and available to any one.

THE GREAT CITY OF CHICAGO HAS EIGHT SALOONS TO EVERY FIVE GROCERIES.

We clip the following from the *Sunday School Times*:

The annual national "drink-bill" of the United States can not be accurately calculated, even on the financial side. Chicago alone spends about a hundred millions in the retail trade, and has eight saloons to five groceries. The total number of gallons of distilled spirits, wines, and malt liquors consumed in the United States in 1906 was over two billion forty-eight million. The total consumption per capita has risen from 17.12 gallons in 1896 to 22.27 gallons in 1906. The brutality, disease, degradation, misery, and death which are traceable to liquor do not admit of quantitative statement.

The brewers are primarily responsible for saloon conditions. Saloon-keepers are usually under such material obligations to them that their dependence amounts to vassalage. They have steadily glutted the market with malt liquors, the number of gallons per capita having jumped from 8.65 gallons in 1881 to 20.21 gallons in 1906, while that of wine and spirits has remained almost at a standstill. Again, the hidden hand of the brewers is felt in political action, not only indirectly through the power of the corner saloon in ward politics, but also directly in bringing to bear great accumulations of capital upon State legislation.

High license and local option, in one form or another, are the prevalent methods of control, a combination of the two systems being usually employed. The working of county-option laws has recently tended toward complete prohibition in several States. The notable anti-liquor movement in the South and other sections of the country is rapidly increasing the prohibitive area.

Just a word in closing in regard to the responsibility resting on editors:

Turn to page 185, GLEANINGS for March 15, and read.

Now, then, are we going to *continue* to help a periodical that "giveth his neighbor drink," or shall we indorse and encourage the one that stands with that old warrior and hero, Joshua?

While reading the Dec. 1st, 1908, issue I came to the temperance department, and, by the way, I never miss that nor the Home papers. I read personal liberty, etc. page 1451. Now, don't you feel sorry for friend F.? I do. He surely is running in a narrow groove. Personal liberty, indeed! Let all such prove their liberty by abstaining from an occasional glass. They will soon see that they have no liberty in the matter. But we do not deny such as he the right to their occasional glass. But we do deny that they have the right to make drunkards of our boys and prostitutes of our daughters, for that is what the open saloons stand for, besides the corruption of politics. Then a look in the wake of the saloons. Do you see liberty? May be; but not such liberty as the fathers of the Revolution fought for.

When I had read friend F.'s letter I hustled for the Dec. 15th issue. Turning to "Temperance" I read, "Jug of whisky for a Christmas gift."

O how sad! for it brought to me a scene that comes within the circle of kinship—a man and his family, if that were all. The man believed in an occasional glass, however rare, hardly once a month. But whisky will have its own, whether once a month or once a day, and this case proved no exception. They had been to town, that happy family. The man took that one glass. It made him careless and sharp with the horses. The team was high-lifted, and resented his treatment of them. They ran off, throwing the driver and all out. The man struck a tree and was instantly killed. The mother, in her excitement and grief, clasped her babe tightly to her bosom as she gathered up her other children, who were not hurt, and bent over the lifeless father. Sympathizing friends, who soon gathered, asked her what was the matter with her dress, the front of which was covered with blood. When they looked the babe was dead. Its throat was torn clear across. The mother fell senseless to the ground. She remained in a dazed state for a long time. She never fully recovered from that heavy blow. Years after, when I was a small boy, I would see her. Her old bent form, her white hair, and her sad face, are still fresh in my memory.

Friend A. I. R., my wish for you is that you may have length of years and strength of mind to fight in the front ranks of this great and glorious cause. My wish for myself is that I might some time meet you, to clasp your hand and look in your face.

The "Rootlets," as you call them, must be proud to have you for their father and grandfather. The Temperance and Home departments should never be dropped out of GLEANINGS.

New Dover, O., Feb. 16.

E. E. LARCOMB.

GOOD FOR INDIANA.

We had our county election Jan. 26. It was voted dry by 1600 majority. The three other counties that had the election the same day went dry by a big majority. C. E. WESTON.
Letts, Ind.

ENLISTED FOR LIFE UNDER THE BANNER OF THE CROSS.

In closing let me say a few words of appreciation of the grand work Mr. A. I. Root has done and is doing in his department of GLEANINGS. His writings influenced me to be a Christian. I think it was that sermonette on that picture entitled "Despised and Rejected of Men," Jan. 1, 1907, that led me to the Savior. I am trying to earn enough money by working for a magazine subscription agency (mail-order work) during my spare time to buy my books (I am preparing to enter the ministry). All my work and study is done in my own little bedroom, as my father opposes all that speaks of God or his work. I should like you to send this to A. I. Root; but please do not publish my name if you use any of this in GLEANINGS. I am a boy 17 years old. Thanking you for past favors, I remain
C. M.

POULTRY DEPARTMENT

CONDUCTED BY A. I. ROOT.

"NOTHING TO DO BUT GATHER THE EGGS,"
AND AN AUTOMOBILE TO DO IT WITH
AND CARRY THEM TO MARKET.

"Nice things," friends, as I have outlined it in the above, is it not? Well, it is just what I have been doing the past winter, and I agree that it is lots of fun, *especially* taking the eggs to market with the auto. You may say, "Oh, yes! when one has plenty of money," etc. But just hold on a little. The auto I use has been in use five years. When thinking of getting a new one I could get an offer of only \$100.00 for it. I decided it was worth more than that to me, and had it shipped down here at an expense of about \$50, so you see I have not much capital invested. A colored man we keep about the place takes care of it nicely, and, under my directions, has so far been very successful in making about all repairs needed. Gasoline here, by the drum, costs only 11½ cts. per gallon; so our rig, that affords Mrs. Root and myself a great amount of enjoyment, costs us much less than a decent horse and buggy. A neat little house for it cost only about \$75.00, and this makes a very handy and much needed workshop besides. What about running an auto in the Florida sand? Well, I had some trouble before I had learned by experience how to manage; but now we have but very little trouble, even if our Oldsmobile runabout is only 4½ horsepower. One great drawback is that it tracks 56 inches, and all the vehicles about here are 60 inches. In spite of this, when I can manage so as to have the wheels on one side or the other run over out of the road on grass or other hard ground I get along very well. When all four of the rubber tires are in soft dry sand you may get in a fix. It is not a serious job even then, for you have only to scoop the soft sand out of the way until you can get out on firm ground. After a rain you are O. K. anywhere, and nice roads are now being pushed forward more or less all over Florida.

Now about the eggs in an automobile. Unless they are well packed you will have to go slow; and my auto path through the woods over a rustic bridge of my own make (materials cost 30 cts.) is *not* the very best road in the world for carrying eggs to market. I managed by purchasing in Chicago some very pretty pasteboard boxes holding a dozen eggs each, for only \$5.00

per 1000.*—These boxes I carry around to the nests (always washing my fingers first), and place each newly laid egg in its little receptacle. Each box of one dozen then has a gummed label pasted on that reads as follows:

FRESH EGGS

FROM A. I. ROOT'S SINGLE-COMB WHITE-LEGHORN
POULTRY-RANCH, ONE MILE SOUTH OF BRADENTOWN,
MANATEE COUNTY, FLORIDA.

If these labels are unbroken the purchaser can rest assured that the eggs in this package were laid on the day that the rubber stamp below indicates. We gather our eggs not only every day but usually *several* times a day.
A. I. ROOT.

MAR. 4, 1909

We usually gather our eggs every day about 4 P. M., and before 5 they are on the counters of one of our best grocery stores.

For some time past we have had from 45 to 50 eggs per day from our 70 hens, and I consider this a very fair yield for 70 all in one yard. A dozen eggs pays for the cost of the grain for the 70, and at 25 cts. per dozen there is a margin of about 75 cts. a day for your labor. Yes, there is a trifling amount of labor to be done with 70 "chickens," besides gathering the eggs—at least we have found it so on our "ranch."

I have had such "good luck," almost invariably, in setting hens that I think I must have been getting over-confident. Do you want to know how the Buff Orpington made out with her 25 eggs? Well, she was so clumsy and awkward that she broke one or more eggs every day until she had only 15 left. I washed the whole setting repeatedly until I was not only "tired" of Orpingtons, but I came pretty near being tired of setting hens altogether. After 24 days and not even *one chick* from the remaining 15 eggs, I broke her up and only two eggs contained chicks in any stage. Because other hens wanted to lay in her nest I had her shut in with wire screen, lifting her out toward night, and letting her go back herself. I should be inclined to think this not exactly "nature's way" were it not that the Leghorn hen that hatched 16 chickens from 15 eggs was managed in this way exactly. Shall I tell you more about those same 16? Well, when old enough to wean the mother hen went up into the pine-tree with the other 70, and the 16 huddled up behind the barrel in the laying-house. Mrs. Root repeatedly urged me to protect them with wire screen, but I "didn't get round to it" until one morning when I found *five* missing, and their remains scattered about near where they roosted. I housed the remaining 11 and tried to trap the "varmint" with the dead chicks. Twice he got in my trap and pulled out; then I went for a good steel trap; but both hardware stores were "sold out." I finally got a second-hand one, but haven't caught him yet, although I am "on the war-path." Yes, I know I can *fence out* all such animals with poultry-netting; but the fowls of my largest yard seem to enjoy so much roaming over the common (we have no near neighbors), I leave a hole in the fence for them to go out and in; and it is at this entrance, out and in, where I am planning to trap the enemy, 'possum or polecat.

*I find a label on these boxes reading, "Mfd. by Central Egg Carriers Co., McGraw, N. Y."

My first trial with the incubator gave me 35 chicks from 70 eggs, which I think is pretty fair. They were put at once in a Mandy Lee fireless brooder, and just now, at four weeks old, they have certainly done *better* than those of the same age with a hen. In this region there is surely no need of artificial heat of any kind for brooding chickens. I had no mishap of any kind except that two got out of the cluster one night over to the opposite end of the brooder, and finally died. Had I looked in, the evening before, this would have been avoided; and had the brooder contained 50 or more, instead of 35, I think there would have been no "cold corner." It is exactly the same as with bees—if a part of the cluster get off by themselves during a cold spell they may chill or starve, or both. With the experience I have had with fireless brooders I feel sure there is no need of paying any one for a patent. Any sort of box or barrel that will keep out intruders and give ventilation is all that is needed. For a hover over the chicks, just tack strips of soft woollen cloth on the under side of a board, and suspend this just above the backs of the chicks. There should be some simple arrangement to raise this hover as the chicks grow older. While I was away one cool day they all clustered in a corner outside; and as Mrs. Root could not well get them to go in, she spread a soft empty burlap sack over them. When I got home about dark they were as quiet, warm, and comfortable under this sack as they could be in the very best brooder. All that was required further was protection from rain and outside intruders. Below is a sample of the reports that are coming from those even away up north who have used the "fireless."

Mr. A. J. Root:—Last spring we got the bee fever. We sent for some sample copies and read them from cover to cover, and had the fever more than ever. We were most impressed with GLEANINGS, and subscribed at once. Now having read it for nearly a year we have such a good opinion of it that we intend to get it as long as its present standard is kept up, bees or no bees.

We read about the Philo system and sent to Mr. Philo and got his book. We made some brooders and they worked finely. No more artificially heated ones for us.

Let me tell you the chicks are as lively as crickets. When the first lot hatched it was about 10 above zero. As this was to be a little experiment, we also had some with a clutch about five days older. At the present writing, any one seeing them would say the ones in the brooder are the oldest by far. With the heated brooders it was necessary to sleep with one eye open all the time, making chick-raising a drudgery. We once nearly lost a whole brooderful by fire. Passing the house accidentally we saw it and saved the chicks and building. Like you, at first we were worried about their getting too cold at night. One night in particular we well remember going out to the house and putting our hands in the opening, only to find it warm and cozy. While it has been said that "seeing is believing," it is also true that trying is convincing. After they were one week old we even had to take off some of the covering for fear they would sweat and then catch cold. Our friends and neighbors come and look at them now and then, and are surprised to find them still alive and scratching. We intend to raise between 600 and 800 the coming season, all with fireless brooders.

I say, off with your hat to Mr. Philo, for he deserves it.

Lititz, Pa., Feb. 26.

SNARELY BROS.

HOW TO MAKE HENS LAY.

Let us go back to the "egg business." Four dozen eggs a day from six dozen hens, if it could be kept up the year round, would be something like 240 eggs per hen, per year, from the whole flock. This, of course, would be impossible. Mr. Rood tells me the winter months are the great months for eggs here in Florida; but even if it is, I think few get as many as we do.

In order to get this result, I give them corn,

wheat, and oats, all they will eat, and they have sprouted oats, soaked oats, and dry grain all the time. It would almost seem as if the sprouted oats they dig out of the ground would be enough green feed; but for almost two months they have been having a wheelbarrowful of lettuce every day from Mr. Rood's lettuce-fields. Heads that burst, or for any reason are unfit to ship, are given the chickens. Besides the above, they have fresh oyster-shells, pounded up every day. We have excellent oysters here, right out of the shells, almost every day all winter. Besides this, mica crystal grit is always in a feed-hopper for them. At first they did not notice it; but now I buy it for them by the 100 lbs. You might think this enough; but I wanted to test Mandy Lee's egg-maker, and I have fed half a \$2.00 pail of it since Jan. 1. As I gave it to the whole flock, I don't see how I can tell how much good it did under the circumstances. I know this—they don't seem to like it as well as they do the wheat bran wet up alone, and I have to give them only a very little in the bran, or they won't eat it at all. Because Fred Grundy made such great claims for alfalfa meal, I got a bag of it; but my Florida hens won't eat it *at all*. They go for the green home-grown alfalfa, but all say "no" to the stuff in bags, even when scalded and mixed with bran. Crenshaw Bros. inform me that they at present know of no successful alfalfa-growing in the State.

TESTING OUT THE FERTILE EGGS BEFORE PUTTING THEM IN THE INCUBATOR; SEE P. 147.

In due time I received for my 50 cts. a poorly made egg-tester, exactly such as Cyphers and others sell for 25 c's., but no secret. I was informed that I could not have it until I signed a pledge "not to divulge," etc. As nothing was said in the advertisement (see p. 147, Mar. 1), I begged to be excused, and asked for my money back, both for tester and for secret; but the following *did* come—no date nor name signed to it:

METHOD OF TESTING EGGS.

Place the tester on lamp, the testing-tube next to the burner. Don't turn the blaze too high, else you might heat eggs too hot while testing.

Take the egg in the finger-tips and thumb of the left hand; steady it with finger and thumb of right hand; place before and against the opening in the tube. It is always best to hold the egg big end up. If infertile it will be a clear milky color with never a sign of yolk to it.

You can never make a mistake between an infertile and a fertile egg. A fertile one will show the golden yolk, and will be of a rich golden hue. If the shell be reasonably thin you can see the outlines of yolk, with a heavy color at the germ center. The germ, if strong, imparts the color to the egg. It is hardest to learn the weak-germed ones—they will show a slight yolk and color, but it is always a pale sickly lemon hue. Never give an egg the benefit of the doubt unless extremely high-priced; then you might risk it.

Don't mix the eggs after testing, then blame the method if any fail to hatch.

Don't think you are proficient after once testing.

Don't use too strong light, such as an electric lamp.

As I was just starting my incubator I went over 75 eggs very carefully, and selected 10 with scarcely a sign of a yolk visible. I put a pencil-mark around these, and tested them daily. In about three days six of the ten showed strongly fertile. Out of the whole 75 I found fourteen unfertile; ten more, besides the four marked ones. As fourteen is very nearly 20 per cent of the 75, according to the rule of chances I should have found two bad ones out of the ten instead of the four. Will some of our trained experiment-sta-

tion workers take this up and tell us if it really is possible to tell any thing about the fertility of an egg just laid? There is no *invention* here, and nothing *new*; for hundreds of people for years past have examined eggs with a tester at all stages of incubation. Later I received the following:

If you will set but rich yellow or orange-colored eggs you will hatch a fine per cent all right. MRS. L. L. WHITE.
Montrose, Mo., Feb. 25.

KILLING VERMIN ON FOWLS BY PUTTING SOMETHING IN THEIR FOOD.

Please turn back to p. 147, March 1. Well, here is what I got for my dollar—no name signed, and no date.

KILL MITE.

1 lb. hyposulphite of soda; 2 oz. Epsom salts; 1 oz. nuxvomica powder.

Dose: One tablespoonful to 25 fowls daily for three days; skip three days, and repeat.

For quick work, clean premises with carbolineum so they will not become reinfected.

Please put on your "thinking-caps," all of you, and listen. How did this man Sprague, or any other man, *discover* that the above drugs, in just the above proportions, fed to fowls, would banish insects? Was there any discovery at all? We have recently been told here in these pages that carbinoleum will do the work. Is that other stuff just a blind, or an excuse for taking the dollar for less than a dozen lines on a little scrap of paper?

I haven't yet heard from the last party in regard to the ten-cent deal, but I will look after it. If there is a way of filling an incubator with fertile eggs on the start, I am willing to invest more money on it, since I have got started.

I think I have said before that our incubator catalogs given away every season are often worth more to any one thirsting for real knowledge than all the secrets and many of the books that cost dollars. Well, the most valuable article I have found anywhere along in the line of "nothing to do but gather the eggs," is in Cypher's catalog. Suppose, for instance, you should see something like the following in some of the poultry journals:

"A WONDERFUL NEW DISCOVERY THAT WILL REVOLUTIONIZE POULTRY-KEEPING."

A "system" whereby you need not feed, nor clean out the pens oftener than once a month, and yet the results will be far beyond any other method. *Only one dollar for the great secret.*

Wouldn't the above make a sensation—that is, if people would *continue* to invest as they have been doing? Well, the closing chapter in Cypher's catalog contains information that pretty nearly fills the bill. Here are some extracts from that chapter. It refers to two test pens of sixty chicks each.

CYPHER'S "DEEP-LITTER" METHOD OF FEEDING.

The deep-litter-fed chicks were larger-framed birds, but not as fat. No green food was supplied the deep-litter-fed chicks, except that short-cut and shredded alfalfa were used as litter, and portions of this material were scratched into the drinking-pans, and the chicks quite often were seen eating this with apparent relish. Water was supplied in all cases by the drip system.

Deep-litter feeding enabled the attendants to take care of fully one hundred per cent more chicks than was the case with the hand-fed chicks; and the deep-litter, scratch-or-go-hungry method produced healthier and more vigorous chicks by a large percentage.

Any time the attendant looks in on deep-litter-fed chicks he will find holes dug in the litter to the depth of several inches, and in some cases the chicks will be entirely out of sight in the holes they have dug, searching for chick food or grain, and working like little beavers for their daily ration.

The deep-litter method is indeed a great labor-saver. The attendant does *not* have to carry with him an alarm clock in order to get back from other poultry work to feed four or five times a day; once a fortnight or even once a month is all that is necessary. Compare the work of feeding chicks in deep litter once a week, or once every two weeks, or even once a month, with feeding them three to five times daily, and compute for yourself the big saving in labor. Furthermore, by the new method less food will produce more pounds of flesh, bone, and feathers, also larger-framed and more vigorous chicks.

One naturally would suppose that, if a brooding-pen were not cleaned oftener than once a month, the stench would become unbearable. Such has not been found to be the case in the experiments here described. Time and again the same litter has been used on Cyphers Company poultry-farm during twelve weeks' experimenting, and no odor was noticeable. In eight to ten inches of litter the moisture of the droppings was quickly absorbed; and the chicks, by scattering the litter about, assist in disposing of whatever odor is present.

In eight cases of deep-litter feeding, compared with eight cases of the hand-feeding method—in which tests the chicks were hatched for two brooders at one time in order to obtain the same hatching benefits—the deep-litter-fed chicks, in six out of the eight tests, came into laying before the hand-fed chicks, and their plumage and general condition were noticeably better.

I will tell you why I have so much faith in the above. When I was about a dozen years old I had a poultry-house on a side hill below my father's horse-stables; and by my request the horse-droppings were shoveled down to the 40 or 50 laying hens for them to scratch over. This fined-up and comparatively dry manure was then banked up around the walls, and thrown over my nest-boxes that were down on the sheltered gravel soil. The slowly fermenting manure kept the eggs from freezing; the drinking-water likewise (drip system); and as the fowls roosted on low roosts they did not suffer from severe weather. I not only had eggs all winter long, when nobody else had any, but received the then unheard-of price, for a short time, of two cents for each egg. I remember delivering some to the rich man of the town when it was so cold they froze in my little basket. I was almost ready to cry about it when the good man said, "Never mind, bub; as we are going to use them right away they are exactly as good as if not frozen," and then I trudged back to my biddies, happy to think I got my *two cents* after all. This rude poultry-house that gave such good results was one of the "open-air" kind, I think, for I don't believe I had money enough at that time to purchase any kind of glass or sashes. I kept grain all the time in the litter, and they scratched it out all winter long; and, so far as I can remember, the house was never cleaned out until we hauled the manure away in the spring, and yet there was no bad odor at any time. I bargained with father to put my "compound fertilizer" under the hills on half of his cornfield, for the excess crop of my half over his half that didn't have the "treatment." I think I also did some extra work on my side of the field. Of course, he agreed to this, and I had almost enough the most corn to carry my poultry through the next winter.

I have been finding so much fault lately with poultry journals and poultry advertisers that I rather enjoy saying some words of commendation. On p. 148, March 1, I copied an advertisement from the *Poultry Herald*. I found, on receiving the process, that Mr. Ruel is a *bee-keeper*, and, of course, a *good man*. His directions for making a better egg-tester than any in the market (at least he thinks so), and his way of using it, are well worth the "silver dime," but it should be re-

membered he claims to be able only to pick out the fresh eggs from a mixed lot. If I am correct it is essentially what is called "candling" eggs in the great city markets. If one undertakes to fill an incubator with eggs from the store, or picked up from his neighbors, this would, of course, be a great advantage; but the process has nothing to do with deciding about the fertility of an egg the day it is laid. Since Mrs. White started it, I notice several are making similar claims. Is this thing to have a run like the "sprouted oats" business?

I have once or twice suggested that the poultry journals were backward about exposing frauds, because they might thereby lose some profitable advertising. I am, therefore, glad to see several coming out clear and plain, no matter if it does cost them something. See the following from that neat and spicy *Fancier's Monthly*, San Jose, Cal.:

These advertisements are read by innocent people who take it for granted that they can, by purchasing the book for \$1.00, learn how to make a small fortune from poultry in an altogether new way. Nine out of ten of those who try it will give it up in disgust; for while the system may be all right the glowing advertisements are purposely worded to catch suckers, and they get them all right. We also do not hesitate to say that the 18 so-called "secrets" are only secrets to those who have never read a poultry journal for any length of time, or whose memory is so faulty that they have forgotten what they did read. The secrets have all been published, not once but dozens of times. They are well worth reading again; but it is the impression given by all such advertisements that a wonderful value for the money is given beginners, that we object to, the inference being that *there lies a short way to fortune from poultry culture*, while the sober truth is that, like learning, there is no royal road to it.

And all this reminds us of a much neater scheme to get rich quick by poultry. We are indebted to H. R. Noack, one of our subscribers, for it. We feel somewhat ashamed that we have not before this discovered such a way to wealth and told all of our readers about it. And it doesn't cost a dollar, either—just ten cents if you buy the *Monthly* at a news-stand, less than a nickel if you take it by the year. Feed at 15 cents a bushel; how to tell the hen that lays two eggs a day from the one that lays twice a year; how to distinguish roosters from hens when reaching for them in the dark, and various other beautiful bargains in poultry literature, pale into insignificance before the effulgent light of this.

Now, friends, if any of you want friend "Noack's" great "goack," send for the March issue of the *Fancier's Monthly*.

I am rejoiced, also, to find in *Farm Poultry*, Boston, Mass., a very full *expose* of "The 'new system' of selecting laying hens." It is the first time, if I am correct, that any *poultry journal* has published in full the Hogan \$10.00 secret, or the Potter dollar secret of "Don't kill the laying hen." This *expose*, however, is copied from the *Journal of Agriculture*, Victoria, Australia. Why should our poultry journals go away off to Australia to get something that was published on these pages more than a year ago? A couple of clippings from the "Questions and Answers" column of *The Poultry Keeper* (Quincy, Ill.) may help to explain the matter. Here are the clippings from the March issue:

FEED AT EIGHT CENTS PER BUSHEL.

I read in the *Poultry Keeper* where there is a party who sells poultry feed for eight cents per bushel. What kind of feed is it, and will it pay to buy some of it for chicken feed? F. M. A. Grand View, Wis.

We think you must be mistaken about any one offering to sell poultry feed at eight cents per bushel. Mr. F. Grundy, Morrisonville, Ill., advertises a system by which you can make your own poultry feed for eight cents per bushel, but he does not advertise to sell the feed. You should write him for particulars.

WANTS TO MAKE FIFTEEN-CENT CHICKEN FEED.

Please state in your next issue how to make feed for chickens at fifteen cents a bushel. J. W. E.

San Jose, Cal.

We assume that you refer to sprouting oats. When the oats sprout they increase in bulk about four times. Thus if you pay 60 cents for a bushel of oats you can sprout them and have four bushels. The process was published in this department some time ago. At present there are several advertisers selling this process, and it would not be fair to them to accept their money for advertising and publish the method.

When I was a boy I belonged to a society for "giving and receiving knowledge;" but doesn't it look now as if some of the poultry journals belonged to a "society" for *withholding* knowledge?

My answer to the above queries would have been, The feed at 8 cts. per bushel is alfalfa mixed with bran, corn meal, etc. If you write the advertiser you will find it will cost \$2.00 to get a small paper book of 79 pages containing this and other "discoveries." The book is valuable, I admit, but its author should give a bigger and better "book" or make the price lower.

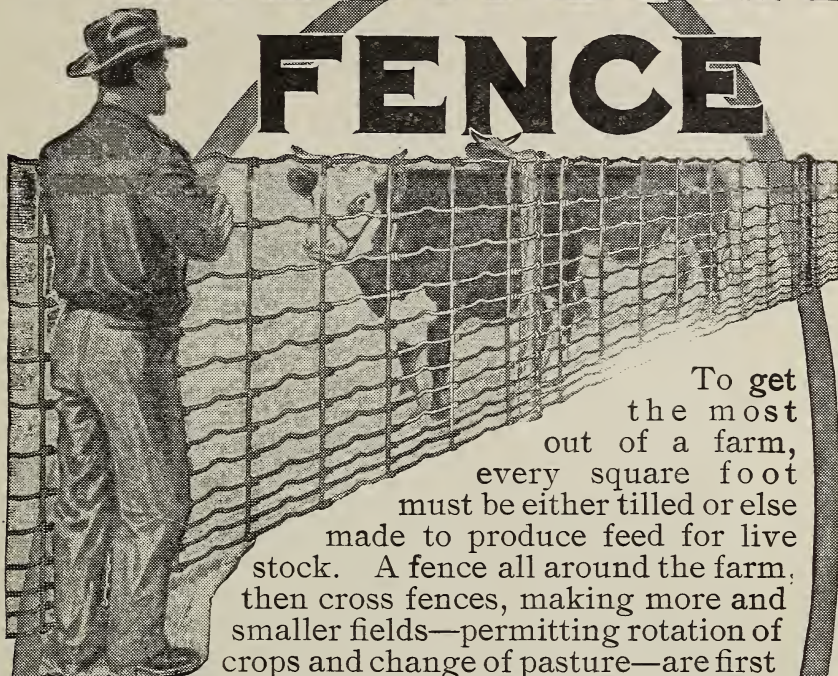
To the second query I would say, As long as we take money for advertising secrets (that we know are no secrets at all), we can not consistently keep our readers posted. You will have to go to the bee journals or—off to *Australia*.

A BEE-ESCAPE FOR CHICKENS.

Since our picture and comments on p. 70, Jan. 15, a number of devices have been submitted, and several more *think* they have solved the problem, but haven't *tried* it. It has only recently occurred to me that our "trap-nest" inventors are already on the same track; for the device that permits the hen to go into the nest, but not out again, would also permit her to go through a fence and not come back. The great trouble is to make the door or opening so that the fowl will not be afraid of it. A door to swing sidewise, like the cover to the keyhole in a padlock, is about what we want. Have it stand part way open, so a little squeezing will let the chicken through, but so made that this door will lock when pushed from the other side of the fence. The device can be made of light wood, so as to go cheaply by mail, I am sure. There is no particular need of sending it to me. Make it yourself and advertise it in the poultry journals. If you get something good and cheap we will give it a free notice.

Now just one thing more that is needed in order that we may have "Nothing to do but gather the eggs"—some sort of automatic watering-device. Why, it makes me "fidgety" to read about "fresh water three times a day," and "scalding the drinking-vessels," etc. Give the chickens "running water" every day in the year. If you can't do any better, have "drip water" always dropping. Put a clam-shell under a leaky rain-barrel, as we did down on the island at Osprey. Now, here is another field for you who are of inventive turn. On p. 22, Mar. 1, a post-auger is advertised that will dig wells. Have a well in your poultry-yard. Drop in drain tile to keep it from caving in. Then we want some one to invent a little windmill to pump "drip water" for the chickens. On our place here we get nice soft water anywhere by going down only about five or six feet. A "baby windmill" to pull up enough water for the chickens ought to be furnished for \$5.00, may be half as much. Who will put it on the market?

AMERICAN FENCE



To get the most out of a farm, every square foot must be either tilled or else made to produce feed for live stock. A fence all around the farm, then cross fences, making more and smaller fields—permitting rotation of crops and change of pasture—are first essentials in making possible maximum earnings.

Here are two great fences—the best square mesh and the best diamond mesh. We selected these two styles years ago, after careful study and advice from many of the most experienced and successful farmers, the correctness of which has been verified by actual results in the field. These fences are the simplest in construction; are made of any size or weight of wire desired and perfectly adapted to all uses and conditions.

If you want square mesh, buy American; if you like diamond, buy Ellwood. You can safely take the verdict of the millions of farmers who have tested and tried out these two great fences. Dealers everywhere, carrying styles adapted to every purpose. See them. Catalogue for the asking.

AMERICAN STEEL & WIRE CO.
Chicago New York Denver San Francisco

ELLWOOD FENCE

A BOOK COULD BE FILLED With Letters From Customers



Anthony Fence

We are building the best fence we know how—and we know how. Best material, best knot, best mechanical help—it takes all these to make fence of Anthony quality—"Best Fence on Earth." Hard steel wire; smooth, compact, strong knot; stays parallel on hillside or level ground; gauge every wire in ours—then gauge the wire of others.

HERE ARE A FEW SQUARE TALKS:

IT IS NOT LOPPY "Sold Anthony Fence for 5 years. First sold stands today straight and firm." Yarnell & Myers, Napoleon, O.	WANT THE BEST "We have customers who would not have any other kind but Anthony." Hester & Son, Bloomingburg, O.	WHY NOT? "We find that our sales of Anthony Fence are continually increasing." J. W. Munger & Son, Charlotte, Mich.	NO COMPLAINT "I have handled Anthony Fence for 5 years and have not had one complaint." J. M. Lawson, Royal Oak, Mich.	GOOD FOR YOU "Must say Anthony Fence is good enough for us. Satisfactory in every respect." Sedalia Lumber Co., Sedalia, Ind.
---	--	--	---	--

AND WE HAVE STACKS MORE



Write today for small hand sample of fence, and booklet. Both mailed free.

The Anthony Fence Co.,
26 Michigan St., Tecumseh, Michigan, U.S.A.

FENCE 13c Up Per Rd.

Get our 1909 prices on any style fence. We sell direct, you get all dealers' and jobbers' profit when you buy direct from our factory. Write at once. **Anchor Fence & Mfg. Co., Dept. V, Cleveland, O.**

"KANT-KLOG" SPRAYERS

Something New

Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet Free.

Rochester Spray Pump Co. 32 East Ave. Rochester, N. Y.

Spraying Guide Free



15 Cents a Rod

For a 22-inch Hog Fence; 16c for 26-inch; 19c for 31-inch; 22 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 60-inch Poultry Fence 37c. Lowest prices ever made. Sold on 30 days trial. Catalog free. Write for it today.

KITSELMAN BROS.,
Box 21, MUNCIE, IND.



FENCE Strongest Made

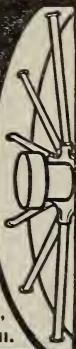
Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free. **COILED SPRING FENCE CO.** Box 101 Winchester, Indiana.

Easy Hauling on Soft Ground

Your wagon won't mire—pile on the load—soft soil or sand—it's all the same when you have the

Empire "Good-Roads" Steel Wheels

The wide tires, plain or grooved, have plenty of surface so they can't sink down. Haul 50 per cent more than with the ordinary wagon. A set of these wheels for your old wagon will pay big profits in labor-saving. Made any size. Will last a lifetime. Send for Free Wheel and Wagon Book, "Good-Roads' Steel Wheels Make All Roads Good."
Empire Mfg. Co., Box 435 Quincy, Ill.



The FARMERS' GARDEN

A Seed Drill and Wheel Hoe is indispensable—not only in a village garden but on largest farms.

Farmers should grow all manner of vegetables and "live on the fat of the land." Should provide succulent roots for Cattle, Swine, Poultry, and save high priced feed stuff. Great labor saving tools of special value for the home as well as the market garden. Send for free book.

SAVE
HIRED
HELP

Only One of
Many
Iron Age Tools

IRON AGE



BATEMAN MFG. CO., Box 1206 Grenloch, N. J.

SAVE MONEY ON ROOFING

\$1.00 buys full roll (108 sq. ft.) of strictly high grade roofing, either rubber or flint coat surface, with cement and nails complete. Most liberal offer ever made on first class roofing. Better than goods that sell at much higher prices. Don't spend a dollar on roofing until you have seen

UNITO ASPHALT ROOFING

You send no money when you order Unito Roofing. Satisfaction Guaranteed. Write today for free samples for test and comparison and our unparalleled selling plan.

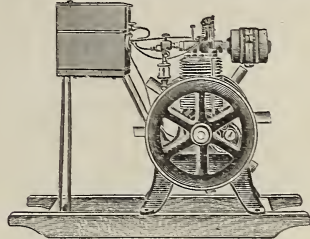
UNITED FACTORIES CO. Dept. A38, Cleveland, O.



BE SURE TO GET THIS!

Every reader of GLEANINGS who is interested in farm power of any kind should send to-day for our catalog of the

WHITE LILY GASOLINE-ENGINE



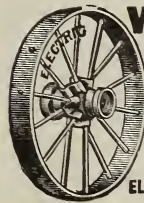
It is the best, simplest, and cheapest 3-H. P. gasoline-motor in the world. Four-cycle—air-cooled—automatically governed.

IT'S THE ENGINE YOU NEED

Will do more work with less trouble than any other 3-H. P. engine. Runs smoothly without jar or vibration. Absolutely dependable. Get our prices and special proposition. Write to-day.

WHITE LILY MFG. CO.

1546 Rockingham Road, DAVENPORT, IOWA



WAGON SENSE

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

Electric Handy Wagon.

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

ELECTRIC WHEEL CO., Box 95, Quincy, Ill.

FIX YOUR ROOF

5c Per Square.—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

Roof-Fix The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our free roofing book tells all about it. Write for it today.
The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.

Here Is Something New From Kalamazoo

Prove for yourself in your own home, that the Kalamazoo is the most perfect—most economical—most satisfactory range for you to use—Your money back if it's not.

Send for Catalog No. 416 with special terms and compare Kalamazoo prices with others

Cash Or Time Payments

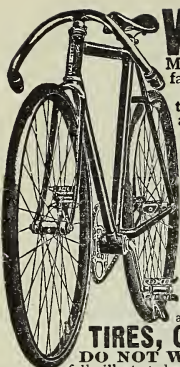
We want every housewife to know the comfort and convenience of a Kalamazoo in her home. You can buy on **easy time payments** or pay cash if you like. Either way—you save \$10 to \$20 on any stove in the catalog. We make it easy for responsible people to own the best stove or range in the world.

We Pay the
Freight

Kalamazoo Stove Co.
Kalamazoo, Mich.

**"A Kalamazoo
Direct to You"**





WANTED--A RIDER AGENT IN EACH TOWN

Model "Ranger" bicycle furnished by us. Our agents everywhere are making money fast. *Write for full particulars and special offer at once.*

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. *without a cent deposit in advance, prepay freight,* and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle you may ship it back to us at our expense and *you will not be out one cent.*

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of *factory prices and remarkable special offers to rider agents.*

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models at the *wonderfully low prices* we can make for 1909. We sell the highest grade bicycles for less money than any other factory. We are satisfied with \$1.00 profit above factory cost. **BI-CYCLE DEALERS**, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

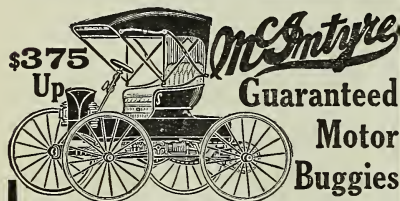
SECOND HAND BICYCLES. We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$2 to \$8 or \$10. Descriptive bargain lists mailed free.

TIRES, COASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at *half the usual retail prices.*

DO NOT WAIT, but write today and we will send you **free** by return mail our **large catalogue**, beautifully illustrated and containing a great fund of interesting matter and useful information; also a *wonderful proposition* on the first sample bicycle going to your town. It only costs a postal to get *everywhere.* **Write it now.**

MEAD CYCLE COMPANY

Dept. H 113, CHICAGO, ILL.

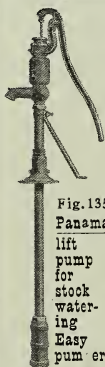


Sure service—always ready—never fail—never get tired—cost no more than a good horse and buggy—cost far less to keep—sure goes over

Any Kind of Roads

Speeded up to 30 miles an hour. Simple, durable, guaranteed mechanical construction. Solid tires—no tire troubles or repair expense. A woman or child can drive them. Farmers of high standing may secure appointment as agents. Twenty models to choose from. Complete line. Write for free catalog No. 31, illustrated and descriptive.

W. H. MCINTYRE COMPANY, Auburn, Indiana
256 Broadway, New York, 1730 Grand Ave., Kansas City.



PUMPING WATER

We make Pumps—over 40,000 of them each year. That is our business—naturally we know what each particular case requires. This is our "Panama" lift pump for large cisterns and wells, 25 ft. or less in depth. It throws $\frac{1}{2}$ gal. water each stroke.

Tell us depth of your well or cistern—whether dug or cased—amount of water you need; whether hand or windmill power is used, and ask for free circular and prices.

We make over 2000 kinds of pumps—so we can surely suit you. Look us up and address as follows—

THE CRESTLINE MFG. CO.

Pumps—Sprayers—Hose—☐ ☐ ☐
CRESTLINE, OHIO, U. S. A.

ACT QUICK—Prices Now Slashed on EXCELL STEEL AND IRON ROOFING OR SIDING

Get your name in quick so we can give you all the benefit of **cut prices on iron and steel** roofing and siding. Can't last long. Get book and free samples.

SEND NO MONEY

so you take no risk. You see what you buy before paying. Pay nothing unless fully satisfied. Lowest prices ever offered on roofing and roofing supplies sold straight to you from Factory at real Factory Prices. Don't buy till you get cut prices and **FREE Roofers' Guide**—Write for Book today. **The United Factories Co., Dept. R38, Cleveland, O.**

PARK'S FLORAL GUIDE ALL ABOUT FLOWERS, 600 fine engravings, also Aster, Phlox, Cockscomb, Pansy, Pink, worth 50c. All Free if you write me a letter, not a postal.

AND WHEN WRITING why not enclose 10 cts for Park's Floral Magazine, a charming illustrated monthly, bright as a Marigold. 1 year, with pkt Double Petunia, and Package of 1000 kinds, for a big crazy bed. 3 lots 25c. Club with friends. **GEO. W. PARK, 27, La Park, Pa.**

SPRAY PUMPS

Deming Spray Pumps are the most carefully, skillfully, hand-fitted pumps made—right there is the main reason they never fail to run easily with little wear. 24 Varieties. Catalogue with Spraying Chart **FREE**. Add 4 cents postage for guide book on Spraying.

THE DEMING COMPANY,
690 Depot St., Salem, Ohio.

Save Money on Berry Boxes and Baskets

Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalogue and price-list O. **Largest Factory of its Kind in the Country.**

NEW ALBANY BOX AND BASKET CO., NEW ALBANY, IND.

SPRAY Your Fruits, Crops, Poultry Houses, and do whitewashing with The **AUTO-SPRAY**. Factory price and guaranteed to satisfy. Fitted with Auto-Pop Nozzle does the work of three ordinary sprayers. Used by Experiment Stations and 300,000 others. We make many styles and sizes. Spraying Guide Free. Write for book, prices and Agency Offer. **The E. C. Brown Co.**
20 Jay Street, Rochester, N. Y.



BEFORE ORDERING BERRY-CRATES AND QUART BASKETS

write for our catalog and special prices. **H. H. Aultfather, box 100, Minerva, O.**

450,000 TREES

200 varieties. Also Grapes, Small Fruits etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for loc. Desc. price list free. **LEWIS ROESCH, Box A, Fredonia, N. Y.**

Let this Free Book tell you how to double your Potato Money

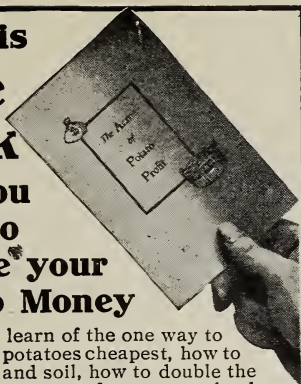
You can learn of the one way to plant your potatoes cheapest, how to save seed and soil, how to double the profit of every acre of your potato land.

You can get this book free for your name on a postal card. It will tell you all about the proper care of potato fields, proper methods of planting and cultivation, how to save hundreds of dollars in fertilizer money alone.

It will tell you how to do all this at a cost of but one dollar. It will describe the one planter that makes this all possible—the famous Acme Hand Planter. It will place in your hands all the great, vital truths of Potato Culture, condensed and plainly written, so it is easy to read and remember them.

You will want this book to put its precepts into practice on your own farm. Send for it now. Just say on a postal, "Send me your potato book."

POTATO IMPLEMENT COMPANY,
Box 520, Traverse City, Mich.



California Grown Seeds

Few people have any knowledge of the magnitude of the Seed Industry in California, where thousands of acres are tilled annually to supply the markets of the world.

NATIVE FLOWER SEEDS.

15 varieties, each of which would be a treasure to any grounds. Some are rare, and difficult to obtain. They include the wonderful Matilija Poppy, by many considered the Queen of all Flowers. Also the superb California Poppy, whose Spanish name is Copa de Oro—Cup of Gold.

Send 50c for 15 packets, containing 15 varieties of California flower seeds, and we will send them to you postpaid. The regular retail price of these is \$1.35.

General Seed and Plant Catalog sent free on request.

(ESTABLISHED 1871)

Germain

SEED AND PLANT CO.
Dept. H LOS ANGELES, CALIFORNIA

A WOMAN FLORIST 6 Hardy Everblooming Roses 25c

On their own roots.
ALL WILL BLOOM
THIS SUMMER

Sent to any address post-paid; guaranteed to reach you in good growing condition.

GEM ROSE COLLECTION

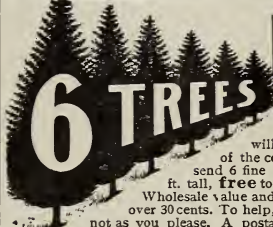
Enchantress, white and buff.
Bouquet of Gold, golden yellow.
Queens Scarlet, dazzling crimson.
Duchess de Brabant, grandest pink.
Snowflake, pure white.
La Detroit, bright flesh.

SPECIAL BARGAINS

6 Carnations the "Divine Flower," all colors, 25c.
6 Prize-Winning Chrysanthemums, - - - 25c.
6 Beautiful Gladioli, - - - 25c.
3 Grand Orchid Cannas, - - - 25c.
8 Sweet-Scented Tuberoses, - - - 25c.
6 Fuchsias, all different, - - - 25c.
10 Lovely Gladioli, - - - 25c.
10 Superb Pansy Plants, - - - 25c.
15 Pkts. Flower Seeds, all different, 25c.



Any Five Collections for One Dollar, Post-Paid. Guarantee satisfaction. Once a customer, always one. Catalog Free.
MISS ELLA V. BAINES, Box 85 Springfield, Ohio



FREE

6 TREES

To prove that our "Blizzard Belt Evergreens" will grow in all parts of the country we offer to send 6 fine Spruces 1 1/2 ft. tall, free to property owners. Wholesale value and mailing expense over 30 cents. To help, send 5 cents or not as you please. A postal will bring the trees and our catalog containing many colored photo plates of our choice Blizzard Belt Fruits, Ornamentals, etc. We want to get acquainted with you and it will pay you to get in touch with our Hardy Blizzard Belt trees. 39 years' experience in growing hardy trees here in what was once called the Great American Desert. Write today.

THE GARDNER NURSERY CO., Box 26, Osage, Iowa



Grow Mushrooms

For Big and Quick Profits
Or For Your Own Use.

Ten years' experience enables me to give practical instructions worth many dollars to you without interfering with regular occupation, no matter where located. Send for Free Book and particulars how to start, etc.
JACKSON MUSHROOM FARM
Dept. 311, 3243 N. Western Ave., Chicago, Ill.

15

PACKETS CHOICE FLOWER AND GARDEN SEEDS

To introduce our high-grade Seeds we will mail the following 15 packets and our large illustrated 1909 catalog, also a coupon good for 10 cents, all for one dime.

VEGETABLE SEED: Beet, Cabbage, Cucumber, Lettuce, Onion, Parsnip, Parsley, Radish, Tomato, and Turnip. Will make a good kitchen garden.

FLOWER SEED: Bachelor's-button, Philox, Garden Heliotrope, Petunia, Forget-me-not. All tested seed and true to name. Satisfaction guaranteed. Order-to-day.

10c

BINGHAMTON SEED CO., 412 Court St., Binghamton, N.Y.



ELKHART BUGGIES

are the best made, best grade and easiest riding buggies on earth for the money.

For Thirty-Six Years

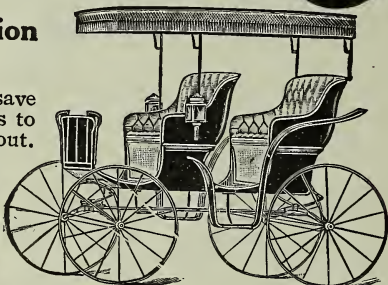
we have been selling direct and are **The Largest Manufacturers in the World** selling to the consumer exclusively.

We Ship for Examination and Approval

guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.
Elkhart, Indiana



World's Record



for hatching, and 648 first prizes won by the

Reliable Incubator

Perfect ventilating, double heating system, inside heater, and automatic regulator—a great fuel saver

Send today for **FREE Poultry Book**—valuable information on poultry raising and incubators. Reliable Incubator & Brooder Co., Box D 49, Quincy, Ill.



Quicker Than 3 Men

You can do more work and do it easier and in less time than 3 men can DO with pick and spade, if you use the wonderful

IWAN POST HOLE AUGER

No hired help, no blisters or backaches. Bore right into wet or dry clay, sand, gravel, gumbo—for 2-ft. post holes or 50-ft. wells. Costs little; saves much. Pays for itself on one job. Write today for free book telling all about it, and letters from men who use it. **Iwan Bros., Dept. R, South Bend, Ind.**

Baby Chicks

of nine leading varieties—all pure-bred. Chicks are cheaper to buy than eggs. We also have brooder fixtures and chick feed. Our catalog is free. Write for one to-day.

JOS. A. BLUM & CO.

DEPT. A

CHATFIELD, O.

PATENTS

25 YEARS' PRACTICE.

CHARLES J. WILLIAMSON,
Second Nat'l Bank Bldg., WASHINGTON, D. C.

Patent Practice in Patent Office and Courts.

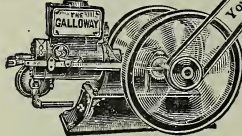
Patent Counsel of The A. I. Root Co.

\$50 to \$300 SAVED

We are manufacturers, not merchants. Save dealers, jobbers and catalog house profit. I'll save you from \$50 to \$300 on my High Grade Standard Gasoline Engines from 2 to 22-H.P.—Price direct to you lower than dealers or jobbers have to pay for similar engines in carload lots for spot cash.

GALLOWAY

Price and quality speak for themselves and you are to be the sole judge. Sell your poorest horse and buy a **5-H.-P. only \$119.50**



Direct From My Factory on 30 Days' Free Trial. Satisfaction or money back. Write for special proposition. All you pay me is for raw material, labor and one small profit. Send for my big **BOOK FREE.**

Wm. Galloway, Pres.
Wm. Galloway Co.
1685 Galloway Station
Waterloo, Iowa



H. C. Phelps

Let Me Pay the Postage on My Big FREE Book to You

Just write me a postal—I'll send the book at once. It shows over 125 styles of Vehicles and a full line of Harness.

I Save You \$26.50 on This Split Hickory Buggy

and save you at the same ratio on all my other vehicles sold direct from my factory to your home. This book tells how I make you these savings, shows you more Vehicles than you could see in 10 large store rooms—and tells you how many options you may have as to finish, style, etc.

H. C. Phelps, President, **The Ohio Carriage Mfg. Co., Station 293 Columbus, O.**



30 Days Free Trial



Greider's Book On Poultry

Concise, practical. How to make money with poultry; information as to buildings, treatment of diseases, etc. Fifteen attractive chromos: sixty prominent varieties. 10c postpaid. Fine, pure-bred stock and eggs at low prices. GREIDER'S GERMICIDE—a sure preventive and an excellent disinfectant. B. H. GREIDER, Rhombs, Pa.



45 Varieties of practical and fancy pure bred poultry. Beautiful, hardy vigorous. Largest, most successful poultry-farm. Thousands to choose from. **Big Profitable Poultry** book tells all about it. Quotes low prices on fowls, eggs, incubators, and supplies. Sent for 4 cents. **Berry's Poultry Farm, Box 153 Clarinda, Ia.**



125 Egg Incubator and Brooder Both \$10

If ordered together we send both for \$10 and pay freight. Well made, hot water, copper tanks, double walls, double glass doors. Free catalog describes them.

Wisconsin Incubator Co., Box 56, Racine, Wis.



Big Profits in SQUABS

Send for our free pamphlet, "How to Make Big Money Raising Squabs." Our birds are supreme. You raise the squabs and we furnish you the customers.

MELROSE SQUAB CO., 1924 Harwood Place, Buffalo, N.Y.



All leading varieties pure-bred chickens ducks, geese, turkeys, pea-fowls, incubators, supplies collie dogs. Send 4c for large poultry and Inc. book **J. J. BRENNER, D. 12, Mankato, Minn.**

Prairie State INCUBATORS

hatch strong, livable chicks and ducks most successfully. Perfect regulation of heat automatically controlled.

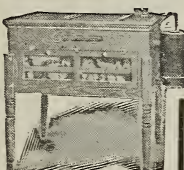
The Sand Tray Diffusion Incubator is the most advanced in every particular and is guaranteed to do the work for you economically.

Piano-Box will do for Brooder

Put our Universal Hover into it and make your own brooder. The Universal Hover may be attached to any form of colony-house, mushroom-house, small portable building or piano box and makes about as good a brooder as money can buy. Ask for Free Catalog. Address



Prairie State Incubator Co., 414 Main St., Homer City, Pa.



We ship quick from St. Paul, Buffalo, Kansas City or Racine

\$7.55 Buys the Best 140-Egg

Incubator ever Made Freight Prepaid

Double cases all over; best copper tank; nursery, self-regulating. Best 140-chick hot-water Brooder, \$1.50. Ordered together \$11.50. Satisfaction guaranteed. No machines at any price are better. Write for book today or send price and save waiting.

St. Paul City Incubator Co., Box 69 Racine, Wis.

\$3000.00 IN GOLD

would not replace our latest book,

Wyandottes in Colors, and How to Judge Them

by Theo. Hervey

It contains 12 pictures from Oil Paintings, and over 100 in black and white. More information on Wyandottes than the Standard could possibly give. Nothing like it elsewhere. One breeder says, "Worth \$500 to him." This book and our great seller,

"HOW TO MAKE POULTRY PAY"

containing 115 pages, 300 pictures, and 8 three-color illustrations, make two of the best books published to-day. One man says—"Can not find words to express my appreciation for either of these works." By sending us \$1.00, the regular retail price of each book, we will send you your choice and your money back if not satisfied.

The Inland Poultry Journal

runs from 40 to 100 pages a month. Subscriptions 50 cents a year. We want you to read it. Subscribe to-day. Address

INLAND POULTRY JOURNAL

15 Cord Bldg.

Indianapolis, Ind.

Inland Poultry Journal,
15 Cord Bldg., Indianapolis, Ind.

Enclosed find \$1.25, for which enter my subscription to your paper for one year and send me the book named below. I understand that my money will be returned if I am not satisfied.

Name.....

Address.....

State.....

Book wanted.....

The Land of Fruit and Flowers

MICHIGAN

There are upward of two million acres of wild lands in the Lower Peninsula of Michigan suitable for general farming. It is the greatest opportunity of the age for the man of small means to acquire a competency.

From \$5 to \$15 per Acre

will buy land that yields crops worth \$50 to \$100 per acre each year.

HOMESEEKERS' EXCURSION

to this territory via Toledo and the

PERE MARQUETTE RAILROAD

on Tuesday, March 23; April 6 and 20; May 4 and 18, at from \$6 to \$8 for the round trip, good fifteen days. Write W. C. TOUSEY, 423 Madison St., Toledo, Ohio, for descriptive circular, or address

H. F. MOELLER, General Passenger Agent, DETROIT, MICH.

SUNNY Florida

FARMS.

Why not locate in Manatee County, (West Coast)? Ten acres net as much as a hundred in Northern States. Delightful climate, abundant rainfall, convenient markets.

VEGETABLES NET \$1000 ACRE.

Outdoor work the year round, several crops a season. Lands reasonable. Write for full information.

J. W. WHITE,
GENERAL INDL. AGENT,
SEABOARD AIR LINE,
DEPT.
PORTSMOUTH, VA

NEW YORK
PHILADELPHIA
BALTIMORE
WASHINGTON
RICHMOND
SAVANNAH
JACKSONVILLE
ATLANTIC OCEAN
GULF OF MEXICO

LAND OF MANATEE

THE "BEST" LIGHT

A portable, pure white, steady, safe light. Brighter than electricity or acetylene. 100 candle power. No grease, dirt nor odor. Lighted instantly. Costs 2 cts. per week. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog. Do not delay.

THE BEST LIGHT CO.
306 E. 5th St., Canton, Ohio

MAKES AND BURNS ITS OWN GAS

WRITE FOR BEST BUGGY OFFER

in America, on famous Columbus Buggies—at prices that save you big money. Lowest factory prices offered by anyone, shipped on one month's approval. 2 years' guarantee. Get new free catalog.

Columbus Carriage & Harness Co.
Station C89 Columbus, O.

Texas Land \$1.00

To \$5.00 Per Acre

Texas has passed new School Land Laws. Millions of acres are now to be sold by the State at \$1.00 to \$5.00 per acre; only one-fortieth cash and no more to pay for 40 years, unless you desire; only 3 per cent interest. You can buy 160 acres at \$1.00 per acre, payable \$4.00 down and 40 years' time on the balance, 3% interest. Greatest opportunity ever offered to investors and farmers. Texas land is better than Oklahoma, Iowa or Illinois. Send 50 cents for Book of Instructions, New State Law, Map of Texas, and brief description of over 400 million acres of vacant public lands in 25 different States, which are open to homestead. Three Books for \$1.00.

E. C. HOWE, 938 Hartford Building, CHICAGO, ILL.

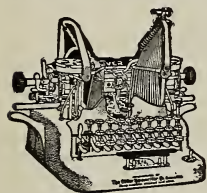
17 Cents a Day Buys an Oliver

This amazing offer—the New Model Oliver Typewriter No. 5 at 17 cents a day—is open to everybody, everywhere.

It's our new and immensely popular plan of selling Oliver Typewriters on little easy payments. The abandonment of long-hand in favor of clean, legible, beautiful *typewriting* is the next great step in human progress.

Already—in all lines of business and in all professions the use of pen and ink is largely restricted to the writing of signatures.

Business Colleges and High Schools, watchful of the trend of public sentiment, are training a vast army of young people in the use of Oliver Typewriters.



The prompt and generous response of the Oliver Typewriter Company to the world-wide demand for *universal typewriting*, gives tremendous impetus to the movement.

The Oliver, with the largest sale of any typewriter in existence, was the logical machine to take the initiative in bringing about the *universal use* of typewriters. It *always* leads!

SAVE YOUR PENNIES AND OWN

The OLIVER Typewriter

THE STANDARD VISIBLE WRITER

This "17-Cents-a-Day" selling plan makes the Oliver as easy to own as to rent. It places the machine within easy reach of every home—every individual. A man's "cigar money"—a woman's "pin money"—will buy it.

Clerks on small salaries can now afford to own Olivers. By utilizing spare moments for practice they may fit themselves for more important positions.

School boys and school girls can buy Olivers by saving their pennies.

You can buy an Oliver on this plan at the regular catalog price—\$100. A small first payment brings the machine. Then you save 17 cents a day and pay monthly.

And the possession of an Oliver Typewriter enables you to *earn money to finish paying for the machine.*

Advantages

The Oliver is the most highly perfected typewriter on the market—hence its 100 per cent efficiency.

Among its scores of conveniences are:

- the Balance Shift
- the Ruling Device
- the Double Release
- the Locomotive Base
- the Automatic Spacer
- the Automatic Tabulator
- the Disappearing Indicator
- the Adjustable Paper Fingers
- the Scientific Condensed Keyboard

Can you spend 17 Cents a day to better advantage than in the purchase of this wonderful machine?

Write for Special Easy-payment Proposition or see the nearest Oliver Agent.

The Oliver Typewriter Co.
911 Huron Road, Cleveland, Ohio.

Service Possibilities

The Oliver Typewriter turns out more work—of better quality and greater variety—than any other writing machine. Simplicity, strength, ease of operation and visibility are the corner stones of its towering supremacy in

- Correspondence
- Card Index Work
- Tabulated Reports
- Follow-up Systems
- Manifolding Service
- Addressing Envelopes
- Working on Ruled Forms
- Cutting Mimeograph Stencils

Will you accept this business book if we send it free?

Sign and mail the coupon below. Send no money! Take no risk.

One hundred and twelve of the world's master business men have written ten books—2,079 pages—1,407 vital business secrets, ideas, methods. In them is the best of all that they know about

- | | | |
|----------------|---------------------|---|
| —Purchasing | —Salesmanship | —Position-Getting |
| —Credits | —Advertising | —Position-Holding |
| —Collections | —Correspondence | —Selling Plans |
| —Accounting | —Man-Handling | —Handling Customers |
| —Cost-keeping | —Man-Training | —Business Generalship |
| —Organization | —Office Systems | —Competition Fighting |
| —Retailing | —Short-cuts and | and hundreds and hundreds of other vital business subjects. |
| —Wholesaling | Methods for every | |
| —Manufacturing | line and department | |

A 9,059-word booklet has been published describing, explaining, picturing the work. Pages 2 and 3 tell about managing businesses great and small; pages 4 and 5 deal with credits, collections and with rock-bottom purchasing; pages 6 and 7 with handling and training men; pages 7 to 12 with salesmanship, with advertising, with the marketing of goods through salesmen, dealers and by mail; pages 12 to 15 with the great problem of securing the highest market price for your services—no matter what your line; and the last page tells how you may get a complete set—bound in handsome half morocco, contents in colors—for less than your daily smoke or shave, almost as little as your daily newspaper.

*Will you read the book if we send it free?
Send no money. Simply sign the coupon.*

The System Co., 151-153 Wabash Ave., Chicago

If there are, in your books, any new ways to increase my business or my salary, I should like to know them. So send on your 16-page free descriptive booklet. I'll read it. **810-4-12**

Name _____
Address _____
Business _____
Position _____

BANKING BY MAIL

4%

Money deposited with us is secure, and works for you continually. Our perfect system of Banking **BY MAIL** brings this opportunity to your door.

The Savings Deposit Bank has a capital and surplus of \$70,000, and assets of over \$700,000. Its policy is conservative; its affairs are ably managed by capable and successful business men.

Deposits of \$1.00 and upward accepted, on which we pay a yearly interest of 4 per cent, compounded semi-annually. Send currency in registered letter, your own check; or by P. O. or express money-order.

**Write for the Booklet
To-day.**

Resources
\$800,000.

Established
1892.

**THE SAVINGS DEPOSIT
BANK COMPANY**
MEDINA, OHIO

CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

Honey and Wax for Sale.

FOR SALE.—Finest quality of raspberry-basswood blend of extracted honey at 9 cts. per lb.; also good quality clover-basswood blend of extracted honey at 8 cts. per lb., f. o. b. at producing point. All in new 60-lb. cans, two in a box. Sample and circular free. E. D. TOWNSEND, Remus, Mich.

FOR SALE.—Comb and extracted honey, either car lots or less. Extracted white in 60-lb. cans, single case, 7½ cents; 5 cases or more, 7 cents. Samples furnished upon application. C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts. J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—Clover and amber honey. Table quality. Write for prices, stating your needs. C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Honey by the barrel or case—extracted and comb; a bargain in honey. Write now. JOHN W. JOHNSON, Box 134, Canton, Mo.

FOR SALE.—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices. DADANT & SONS, Hamilton, Illinois.

FOR SALE.—Fine quality table honey in 60-lb. cans; alfalfa, basswood, or amber. ROBT. A. HOLEKAMP & SON, 4263 Virginia Avenue, St. Louis, Mo.

FOR SALE.—Clover extracted honey of finest quality in 60-lb. cans. Also amber-colored. J. F. MOORE, Tiffin, O.

FOR SALE.—Amber and buckwheat honey, 7½ cts. delivered. ORANGE MOUNTAIN BEE FARM, West Orange, N. J.

Honey and Wax Wanted.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—I can use a few thousand pounds more extracted basswood or clover honey. H. C. AHLERS, West Bend, Wis.

WANTED.—Beeswax, will pay 31 cts. cash or 33 cts. in trade delivered. Send for catalog. W. D. SOPER, Jackson, Mich.

Help Wanted

WANTED.—Man to work in bee-yards. A good opportunity for a man of some experience to learn to run a system of apiaries. State wages wanted, experience, etc. CHARLES STEWART, Box 22, Johnstown, N. Y.

New York State Bee Inspector.

WANTED.—A bright boy or young man of pleasing address to help in bee-yard and in extracting-room, rear queens, etc.; one who wants to learn to be a good bee-keeper. Pleasant surroundings, good home, permanent place. No farm-work; live in town. Address Honey bees, 35 and 37 Robin St., Albany, N. Y.

Situations Wanted

WANTED.—Situation in apiary; several years' experience in Italy. PURUGINI LUIGI, 230 North St., New Britain, Ct.

Wants and Exchanges.

WANTED.—Salesmen to introduce our New Commercial and Statistical State Chart for office and general use. The work is congenial and profitable, the earnings being according to your ability. A thorough training is given before the work is started. RAND, McNALLY & Co., Chicago, Ill.

WANTED.—Several hundred colonies of bees in lots of 25 and up, on Hoffman or Danz, frames in the following States: Delaware, Maryland, Eastern Pennsylvania, and Eastern New York. Address Box 16, Gleanings in Bee Culture, Medina, O.

WANTED.—Bees in any old hives, in large or small lots. Give full details in first letter; must be a bargain. E. W. BROWN, Morton Park, Cook Co., Ill.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—To send you catalogs of smokers and bee-supplies for the fun of it, if we don't get a cent; try us by sending your address and your friends'. F. DANZENBAKER, Norfolk, Va., or Medina, Ohio.

WANTED.—50 to 100 three-frame nuclei, with queen, also full colonies. Give price and particulars. W. C. DAVENPORT, 4166 Central St., Chicago, Ill.

WANTED.—500 colonies of bees within 200 miles of Philadelphia. E. W. BROWN, Salem, N. J.

WANTED.—200 stocks or less of bees within 150 miles of Detroit. A. W. SMITH, Birmingham, Mich.

WANTED.—Bees. State quantity and price, kind of hive, etc. "F," care of H. H. JEPSON, 182 Friend St., Boston, Mass.

WANTED.—An apiary to run on shares. Correspondence solicited. Address M, care of GLEANINGS, Medina, Ohio.

WANTED.—Modern engine lathe, not over 24-in. swing; second-hand. GEO. RALL MFG. CO., Galesville, Wis.

WANTED.—20 hives of bees; must be free from disease. HENRY ROORDA, Fair Oaks, Ind.

WANTED.—To buy or rent an apiary in Wisconsin. Address BEEMAN, 531 W. Main St., Madison, Wis.

Souvenir Post Cards.

Eight beautiful birthday, Easter, St. Patrick's day, or assorted post cards mailed for 15 cts., or 15 for 25 cts.; regular 2 for 5 cts. cards. M. T. WRIGHT, Medina, Ohio.

Monogram Stationery.

Twenty-five sheets of fine-fabric writing-paper, die-stamped with any two initials. Colors, 50 cents; gold or silver, 60 cents. Envelopes to match. Postage paid.

ART STATIONERY COMPANY, Dept. 4, 4413 Woburn Ave., Cleveland, O.

Stamp Collections.

Boys, collect stamps; 1000 mixed, 15 cts. Stamps exchanged for bee-supplies. EDWIN EWELL, 704 Elm St., Waseca, Minn.

Real Estate.

Land for sale in Uvalde Honey Belt, by Asherton Land and Townsite Co. E. A. ARMSTRONG, Asherton, Texas.

FOR SALE.—My bee-ranch of two acres of land and work-shop; also 118 colonies of bees; a fine bee location, and no disease. Write for prices. S. E. ANGELL, Harpers Ferry, Iowa.

Bees and Queens

FOR SALE.—Colonies of Golden or Leather-colored Italians, strong and healthy, ready to do business at once, in 10-frame first-class Dov'd and Danz. hives, combs built straight from full sheets of fdn., at \$6.00 per colony; two or more, \$.50 each. Queens almost one year old. Hives are securely bound with strap iron and 2-inch staples so they bear shipment better. Danz. supers with sections and 1-inch starters, etc., at \$1.00 each extra. JOSEPH W. LEIB, 563 S. Ohio Ave., Columbus, O.

Missouri-bred Italian queens; great hustlers in sections; cap white, and gentle; cells built in strong colonies, mated from two-frame L. nuclei. Select untested, \$1.00; tested, \$1.50; b eeders, \$3.00. Two L. frame nucleus with laying queen, \$3.00; ten for \$25.00; virgins, 50 cts. each; \$5.00 per dozen. I guarantee satisfaction and safe arrival. L. E. ALTWEIN, St. Joseph, Mo.

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Banat, and Caucasian queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—After March, fine Italian, Carniolan, and Caucasian queens; virgins, each, 40 cts.; dozen, \$4.50; untested, 75 cts. each; dozen, \$8.50. Orders booked now. Safe arrival and satisfaction guaranteed. EDWA. REDDOULT, Bradentown, Fla.

FOR SALE.—100 colonies of bees in chaff hives and packing-boxes, located in two places; clover and raspberry and buckwheat for 300; two honey-houses, and extractors and supers. W. L. COGGSHALL, Groton, N. Y.

FOR SALE.—A few colonies of the genuine Henry Alley strain of golden Adell Italians in eight-frame Dovetailed hives, free from disease, at \$7.00 per colony, f. o. b. Wingate. J. R. MCCORKLE, Wingate, Ind.

ITALIAN QUEENS.—Ready, 1909 list of Mott's strain of Red-clover and Goldens. Leaflet, How to Introduce Queens, 15 cts.; leaflet, How to Increase, 15 cts.; one copy of each, 25 cts. E. E. MOTT, Glenwood, Mich.

5000 three-band Italian queens ready to mail March 1. Un-tested, 75 cts.; tested, \$1.00; breeders, \$5.00. Ask for prices in large quantities. W. J. LITTLEFIELD, Route 3, Little Rock, Ark.

FOR SALE.—Ten colonies of Italian bees in lots to suit; good condition; young queens; at a bargain. Write at once for prices, etc. HARRY C. KLAFFENBACH, 110 West Eighth St., Muscatine, Iowa.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & Co., 340 Fourth Street, Ogden, Utah.

FOR SALE.—300 nuclei with good queens for spring delivery. Place orders now, and know you get them. D. J. BLOCHER, Pearl City, Ill.

Italian queens and nuclei; two-frame nucleus with queen, \$2.50; tested queen, \$1.00; 6 for \$5.00. Untested queens in season at 75 cents each. W. J. FOREHAND, Fort Deposit, Ala.

FOR SALE.—Superior honey queens, red-clover strain; untested, \$1.00; tested, \$1.25; select tested, \$1.50. Send for circular. VIRGIL SRES & BRO., North Yakima, Wash.

FOR SALE.—100 colonies of pure Italian bees in eight and ten frame Dovetailed hives at \$6.00 each; in lots of ten, \$5.00 each. F. A. GRAY, Redwood Falls, Minn.

Extra-fine queens of the red-clover strain, bred by the originator. Fine queens for breeders' use, a specialty. F. J. WARDELL, Uhrichsville, Ohio.

FOR SALE.—Golden Italian queens, tested, \$1.00; two-frame nucleus with queen, \$3.00. ROCKHILL APIARIES, S. T. HOOKEY, Prop., 4712 Oak St., Kansas City, Mo.

FOR SALE.—Golden Italian queens, untested, 50 cts.; tested, \$1.00. Safe arrival. No discount on quantity. D. T. GASTER, Rt. 2, Randleman, N. C.

NOTICE.—In writing me for prices on Italian queens and nuclei, note change in address. Queens and bees are ready to ship now. C. B. BANKSTON, Rockdale, Texas.

Improved selected untested Italian queens, 50 cents.

GEO. A. FRANCIS, 1453 Sea View Ave., Bridgeport, Ct.

FOR SALE.—Bees in two-story hives, for extracted honey. Write for prices. C. H. W. WEBER, Cincinnati, Ohio.

POUND BEES, nuclei, full colonies, from Mechanic Falls branch. Prices on application. MASON, Mechanic Falls, Me.

For Sale

FOR SALE.—By the executors of the estate of Mr. E. L. Pratt, 100 colonies of bees; some 200 empty hives, mating-boxes, frames, tools, etc.; one portable bee-house, along with all his appliances, good will in the bee-business, with a list of his customers, trade, etc.; value about \$1000. Kindly communicate at once with Mrs. E. L. Pratt, Swarthmore, Pa.

FOR SALE.—One Sprague damper and valve-regulator for regulating the temperature of your house; adapted for steam, hot water, furnace, natural gas, or stove. Manufacturer's price, \$30.00. I have one to spare at \$16.00, or will trade for honey or wax. A. L. BOYDEN, Medina, Ohio.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.

THE PENN CO., successors to W. P. SMITH, Penn. Miss.

FOR SALE.—Why did you get so many stings in the face last season? Because you did not have on one of the Alexander wire bee-veils at 60 cts. each.

FRANK C. ALEXANDER, Delanson, N. Y.

FOR SALE.—Sweet-potato seed. Bright stock, yellow Jersey, packed fresh in storage-house on day of shipment. Sweet-potato and other plants in season. Send for free circular and price list. L. H. MAHAN, Terre Haute, Ind., Box 143.

FOR SALE.—40 Root 2-story dovetailed hives, cheap. Painted and in good shape, with frames, tops, and bottoms; also 80 comb-honey supers. Goods at Traverse City, Mich. Must go. Offers will be considered. B. L. BYER, Upland, Cal.

FOR SALE.—About 1500 5-gallon honey-cans, with cases all in good condition, and were new when shipped to us. Make us an offer on cans with or without cases.

PERFECTION BISCUIT CO., Fort Wayne, Ind.

FOR SALE.—Second-hand Quinby hives for extracting, twelve frames wide, two tiers high; closed-end frames $11\frac{1}{2} \times 17\frac{1}{2}$ in.; \$1.50 each, or \$50.00 for the lot. A. H. ROOT, Canastota, N. Y.

Asparagus roots—the kind that is right; can refer you to market growers; orders booked now. WILL D. QUICK, Box 156, Ashton, Ill.

FOR SALE.—Choice re-cleaned alsike clover seed, \$10.00 per bushel. In lots of two bushels and over, new bags included, f. o. b. here. G. A. BLEECH, Jerome, Mich.

FOR SALE.—Pure maple syrup of my own make; 5 gallons or less, \$1.10 per gallon; in 6-gallon lots, \$1.00 per gallon, cash with the order. J. ALLEN FLETCHER, New Burlington, O.

FOR SALE.—One-half H. P. gasoline-engine, nearly new, at \$50.00, or will trade it for any thing I can use in bee-supplies. M. A. JONES, Atwater, Ill.

FOR SALE.—100 eight-frame hives, 60 cents each; supers to match, nailed and painted, 20 cents each. F. H. MCFARLAND, Hyde Park, Vermont.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Roots's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Danzonbaker comb-honey hives and other bee-supplies. Write for prices. ROBT. INGRAM, Sycamore, Pa.

FOR SALE.—Bee-supplies at factory prices. D. COOLEY, Kendall, Mich.

FOR SALE.—Lewis bee supplies, berry-boxes, and crates. Write for catalog. W. J. MCCARTY, Emmetsburg, Iowa.

FOR SALE.—25 eight-frame hives, very strongly made, and neatly painted; cheap. L. E. YODER, Sun, W. Va.

HOUSE PLANS.—Blue prints of 20 artistic homes for 25 cents. EHLERS & SON, Architects, Carthage, Mo.

FOR SALE.—One ten-inch Root foundation-machine, good as new. Price \$20.00. F. C. MORROW, Rt. 1, Blevins, Ark.

Poultry.

FOR SALE.—S. C. Brown Leghorns. Baby chicks, \$3.00 per 25; \$5.00 per 50, \$10.00 per 100. Bred for shape, color, and laying qualities. I guarantee safe arrival. H. M. MOYER, Rt. 2, Bechtelsville, Pa.

FOR SALE.—Brown Leghorn, B. P. Rock, S. L. Wyandotte eggs; \$1.00 to \$1.50 per 15. Raised on separate farms. Write for full particulars. F. C. MORROW, Rt. 1, Blevins, Ark.

FOR SALE.—R. C. Brown Leghorns. Won firsts on cockerel, hen, and pullet. These birds score as high as 94%. Eggs, 15 for \$1.50. MRS. GEO. W. ARMENROUT, Irving, Ill.

Indian Runner duck eggs from prize-winners at \$1.00 per 12; \$4.00 per 55; \$6.50 per 100. Circular free. KENT JENNINGS, Mt. Gilead, Ohio.

GOLDEN BARRED ROCKS.—The new beauty and utility fowl. Plumage barred buff and white. Write for literature and a feather. L. E. ALTWEIN, St. Joseph, Mo.

S. C. W. Leghorns, bred for heavy egg production winter and summer. Lakewood-Blanchard strains. Great profit payers. Selected eggs, \$1 per 15. W. I. HARRINGTON, Brunswick, O.

Young stock cock and hen homer pigeons, guaranteed mates; good squab-breeders, and lovely birds; \$1.50 per pair. Safe delivery guaranteed. J. A. THORNTON, Ursa, Ill.

FOR SALE.—S. C. Brown Leghorns, Barred P. Rocks; winners, and winter layers. Eggs, \$1.25 per 15; \$2.00 for 50. Unfertilized eggs replaced free. LOUIS PERRIER, Bonnots Mill, Mo.

FOR SALE.—Eggs of R. C. Black Minorcas, R. C. R. I. Reds, and White Wyandottes; \$1.00 for 15; \$2.00 for 35. Rural Rt. JAMES STEWART, Franklin P'ce, O.

FOR SALE.—Choice White Wyandottes; 15 eggs, \$1.00; 30 eggs, \$1.50. J. F. MICHAEL, Winchester, Ind.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc. STAPLER'S, 412-414 Ferry St., Pittsburg, Pa.

FOR SALE.—Eggs, \$1.25 per 15 from pure Partridge Wyandotte chickens. C. G. HISKEY, Flat Rock, O.

Bee-keepers' Directory.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular. A. W. YATES, 3 Chapman St., Hartford, Ct.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphan, Mo.

CARNIOLAN, BANAT, and CAUCASIAN queens. Order from original importer, FRANK BENTON, box 17, Washington, D. C.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

Golden and red-clover Italian queens. See my other adv't in this issue. WM. A. SHUFF, 4426 Osage Ave., Philadelphia

For your address on a postal card I will send you valuable information pertaining to bee culture. Write to-day. J. E. HAND, Birmingham, O.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts.; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. For prices see large ad. in this issue. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

Catalogs Received.

"Seed and Plants for 1909," by Jno. D. Imlay, 55 N. Fifth St., Zanesville, Ohio. This little catalog will interest those who live in Central and Southern Ohio.

"Small Catalog No. 62," by the Elkhart Carriage and Harness Co., Elkhart, Ind. This is the spring announcement of an old and reliable concern manufacturing carriages, etc. They sell direct to the consumer.

"Columbus Vehicles," by the Columbus Carriage and Harness Co., Columbus, Ohio. This is a fine catalog describing the buggies, carriages, and harness made by this large company. They have a large and splendidly equipped factory in the capital city of Ohio.

"Iron Age Farm and Garden News," Greenloch, N. J. This is the usual monthly announcement gotten up by the Bateman Mfg. Co., makers of the "Iron Age" garden tools. If you are a market-gardener, send in your name and get it regularly. Free.

"Catalog of the Germain Seed and Plant Co.," Los Angeles, Cal. This is a really good catalog of seeds suitable to the Pacific coast, and countries having a similar climate. There is a list of California native flower-seeds, and one of Australian seeds of trees and shrubs. There is also a long list of eucalyptus seeds that is deserving of notice by planters of gum-trees.

Ellwanger & Barry, Mount Hope Nurseries, annual catalog of trees and shrubs for sale at Rochester, N. Y. This is the usual spring announcement of this great nursery firm—a model catalog from a model firm.

"Easy Digging," by Iwan Bro's, South Bend, Ind. A very small catalog about a wonderful tool—Iwan's post-hole digger. This price list ought to go to every place where there are holes to dig.

"Fruit and Vegetable Growing in Manatee County," by the Seaboard Air Line Railway, Portsmouth, Va. This is an excellent booklet on gardening and home-making in the Manatee River section of Florida. It gives an excellent description of the resources and attractions of the locality, and is certainly well worth sending for and studying by any one desiring a home in a mild climate. A fine map of Florida is sent with it. The enterprise of this railroad is highly commendable to say the least.

"Farmer on the Strawberry," by L. J. Farmer, Pulaski, N. Y. This is really a fine treatise on the cultivation of the strawberry, by a man who is master of his business. We see no price attached to this, but there ought to be a charge, as it is worth paying for. If you are interested in strawberries you certainly ought to send for a copy.

Convention Notices.

The eighteenth annual meeting of the Connecticut Bee-keepers' Association, for the election of officers and the transaction of other business, will be held Friday, April 9th, Room 50, State Capitol, Hartford, beginning at 10:30 A.M. Among the speakers will be J. E. Crane, Middlebury, Vt.; Rev. Elmer A. Dent and Alva W. Yates, of Hartford, and Allan Latham, Norwichtown, Conn. The current year promises to be a banner one in the history of the organization. A foul-brood bill is before the legislature; an advantageous offer has been made the association with respect to its fall exhibition. Let every bee-keeper in the State be present at this spring meeting. Send 50 cents and be enrolled a member for one year. JAMES A. SMITH, Sec., Box 38, Hartford.

TO NEW JERSEY BEE-KEEPERS.

Our foul-brood bill has been introduced into the Senate by Senator Gebhardt, of Hunterdon Co., and is now in the hands of the Committee on Agriculture, of which Senator George W. F. Gaunt is chairman. It is now up to the bee-keepers of the State to make their needs known to their law-makers. Let each bee-keeper write at once to the assembly men and senator from their respective counties, urging them to support this bill. Also write to Senator G. W. F. Gaunt, asking him and the other members of the committee to get the bill before the Senate. All law-makers may be addressed at State-house, Trenton, New Jersey. What we do must be done at once, for the legislature will adjourn before many weeks. ALBERT G. HANN, Sec'y New Jersey Bee-keepers' Ass'n, Pittstown, N. J.

SPECIAL NOTICES BY A. I. ROOT.

A. I. ROOT, MEDINA, O.

After this date, address me as above and not at Bradentown, Fla. I expect to be in Ohio until some time in November, after which time, Providence permitting, I shall return to my Florida home in Bradentown, where so many good people are located.

GET IT GALLOWAY

My Great Buggy Proposition—IT'S NEW.
Positively best ever made by any factory.

I Save You \$28.75 on this Job Free Trial

Saves You 33% to 50% lowest prices, best proposition ever made in buggy history. Get it before buying a buggy of any kind. It helps you pay for buggy. Also harness, reins, implements, etc.


WM. GALLOWAY CO.
1686 Galloway Sta. Waterloo, Ia.



THIS BOOK SENT TO YOU FREE

Learn Dressmaking At Home By Mail

Qualify yourself to command a good income. Start in business for yourself. Many now earn \$25 a week. This course enables you to Dress Better at One-Half the Usual Cost by teaching you to do your own sewing. The American System is most simple and complete; easily learned; meets every requirement. 10,000 students and graduates. Write today for free book. American College of Dressmaking, 1014 Reliance Bldg., Kansas City, Mo.



OUR EXCHANGES.

LUMBERMEN WASTE HALF OF EVERY TREE THEY CUT.
In an article in the April *McClure's*, entitled "A Continent Despoiled," Rudolf Cronau tells of the enormous waste of lumber. He says:

"Dr. Bristol, chief of the Section of Wood Chemistry, states that fifty per cent or more of the average tree as it stands in the forest is wasted before reaching the market in the form of lumber. He says, further, that the timber cut has increased from 18 billion board feet in 1880 to 50 billion board feet in 1906, and that our present consumption of wood in all forms is equivalent to at least 100 billion feet annually, and possibly much more.

"Further, it may be new to you that white pine, in former years the greatest of all our lumber trees, and the only wood dignified with the name 'pine,' has, under the heavy drain upon it, so fallen off that its domination of the lumber market has practically ceased. In from ten to fifteen years the supply of other woods, for instance the yellow pine and the Douglas fir, will be just as limited as that of white pine now. Rapidly decreasing, also, is our supply of hard woods, the prices of which go higher and higher. White oak went up from \$48.00 in 1890 to \$85.00 in 1907; hickory, from \$38.00 to \$65.00, and yellow poplar from \$29.00 to \$53.00. Expert foresters proclaim that we are, without having made any provisions against it, dangerously near a hardwood famine which will strike at the very foundation of some of the country's most important industries.

"Since 1870, forest fires have each year destroyed an average of fifty lives and fifty million dollars' worth of timber. Not less than fifty million acres of forest is burned over yearly."

SPECIAL NOTICES

BY OUR BUSINESS MANAGER

Our Chicago office advises us that they are getting well established in their new location at 42—60 Institute Place, in the Jeffrey Building, and the attention of our readers who visit Chicago is again called to their new location. Those who have visited our old office will easily find the new location, three blocks north of the old place. Large stocks of fresh goods will be carried constantly on hand. With the rush of orders now coming in, we urge early ordering to avoid annoying delays as the season progresses.

HOW TO GROW ALSIKE CLOVER.

We have for more than a year been selecting the very best articles in the farm press relating to the culture of alsike. The result is, we have selected the cream of these, and in the course of two days will have them issued in the form of a booklet, ready for distribution. We do this because the books devoted to farm crops devote practically no space to this important subject, and many are seeking for information. The articles are all written by men who thoroughly understand the culture of alsike. A single copy will be sent free to any reader of GLEANINGS; 100 copies will be 50 cts., postpaid.

BUSINESS BOOMING.

If we may judge of the season's prospects by the number of orders received, this bids fair to be a record-breaking year. We have unfilled orders on hand for more than twenty carloads. Owing to changes in the rules of transportation companies it takes more goods to make a carload now than it did a few years ago. In territory west of Chicago the carload minimum weight is 36,000 lbs., and in the eastern territory 30,000; whereas a few years ago 24,000 was the minimum. A carload now means 25 to 50 per cent more than it did formerly. We find it hard to get off more than four cars a week and take care of the smaller orders. We are beginning to run overtime in our efforts to take care of the orders received.

MAPLE SUGAR AND SYRUP.

When our March 15th forms closed we had had one of the most remarkable seasons for maple sugar and syrup that Medina County has had for years, and we thought it was then at an end; but since that time we have had one or two good runs of sap, and we again suggest to our friends who want good maple sugar and syrup that this is the time to buy. Don't put it off. Prices are as follows:

Maple sugar, first quality, 1 to 10 lb. lots at 15 cents per lb.
10 to 50 lb. " " 13 " "
100-lb. lots and over, 12 " "
Maple syrup, first quality, 1-gallon cans at \$1.10 per gallon.
Cases of 6 one-gallon cans at 1.00

If prices are higher or lower we will bill accordingly.

NO. 2 OR B GRADE SECTIONS OVERSOLD.

The demand for No. 2 or B grade sections seems to be increasing each year, and we are sold out on this grade at an earlier date each year. An average run of basswood will make about four to five thousand No. 1 or A grade to one thousand No. 2. There are some places where only No. 1 grade is used. For instance, we seldom receive orders for No. 2 or B grade from California or from foreign countries, and the No. 2 produced in making No. 1 for this trade can be used elsewhere. We have some customers who care more for accurate workmanship than for color or roughness or other blemishes, and who prefer our No. 2 to some interior brand of No. 1. However, this preference for No. 2 grade is being overworked so that we can not supply it. If the trade continues so strong on the second grade we shall be compelled to raise the price to more nearly that of No. 1 in order to equalize the demand, for we can not afford to make No. 2 except as they accumulate in making No. 1, and we do not get enough in this way to fill orders. No one should order more than one-third as many No. 2 as of No. 1.

ANSWER

This Ad and Get My Big FREE Book and Save \$50

Buy direct from the biggest spreader factory in the world—My price has made it—Save dealer jobber and catalog house profit. No such price as I make on this high grade spreader has ever been made before in all manure spreader history. Here's the secret and reason: I make you a price on one based on a 25,000 quantity and pay the freight right to your station. You only pay for actual material, labor and one small profit, based on this enormous quantity on a

GALLOWAY

Get my brand new proposition with proof—lowest price ever made on a first class spreader, with my agreement to pay you back your money after you try it 12 months if it's not a paying investment. How's that for a proposition? If I did not have best spreader I would not dare make such an offer. 20,000 farmers have stamped their O. K. on it. They all tried it 30 days free just like I ask you to try it—30 DAYS FREE. Five Sizes—including New Complete Steel Gear Spreader—70-bu. Size.

Drop me a postal, and say—"Galloway, send me your new proposition and Big Spreader BOOK FREE with low prices direct from your factory."

Nobody can beat it.

Freight Prepaid



Fits Your Own Wagon

1689 Galloway Station, Waterloo, Ia.

A GOOD INVESTMENT.

You can make no better investment than to take the discounts I am offering on bee-keepers' supplies. These discounts will diminish as the season advances; so the earlier you send in your order the better the investment. You can not afford to miss this special offer. Send in the list of the goods you want and get my net prices by letter.

My stock of Root goods is the largest and most complete carried in the West, and with carloads continually being added I am in position to meet every want of the bee-keeper, with promptness and satisfaction.

Write to-day for new prices and catalog.

JOS. NYSEWANDER,
565-7 W. 7th St. Des Moines, Iowa

ROOT'S GOODS

ARE MONEY-SAVERS

We carry a full line of supplies, bees, queens, etc., and can supply you with any thing in the BEE LINE. Queens, any quantity, tested, \$1.00; untested, 75 cts. each.

REA BEE & HONEY CO.
REYNOLDSVILLE, PENNA.

\$15,000 STOCK

. OF .

Bee Supplies

on hand at Syracuse, N. Y.

Send in your orders, which will receive prompt attention.

THE A. I. ROOT CO.
SYRACUSE, :: NEW YORK

HEADQUARTERS FOR

ROOT'S BEE-KEEPERS' SUPPLIES

at Root's prices.—No drayage charges.

We offer for a short time,

Omega CREAM SEPARATORS

for spot cash, freight prepaid to your station, as follows:

No. 1—capacity 325 lbs., \$50. No. 3—capacity 500 lbs., \$60.
No. 2—capacity 400 lbs., \$55. No. 4—capacity 700 lbs., \$70.

RAWLINGS IMPLEMENT CO.,
9-11 W. Pratt St. Baltimore, Md.

BEE-SUPPLIES FOR SEASON OF 1909

Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **bee-supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **bee-supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

Being manufacturers we buy lumber to advantage, have lowest freight rates, and sell on manufacturers' profit basis. Let us quote you prices. Prompt shipment guaranteed.

MINNESOTA BEE SUPPLY CO., 123 Nicollet Island, Minneapolis, Minn.

A YEAR'S WORK IN AN OUT-APIARY

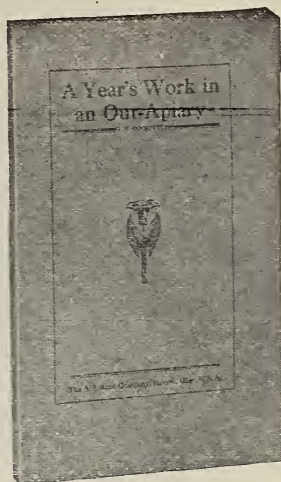
.. OR ..

An average of 114½ pounds of honey
per colony, in a poor season,
and how it was done.

First edition, Dec., 1908, 1000 copies.
Second edition, Jan., 1909, 3000 copies.

By G. M. DOOLITTLE

Author of "Scientific Queen-Rearing."



Mention has already been made of this book in our reading-columns; but there is such an unusual interest in it that we call attention to it once more.

To understand the scope of the work better, please notice that it contains the following chapters:

- Chapter I. An average of 114½ pounds of section honey per colony in a poor season, and how it was done.
- II. Same, continued.
- III. Bloom time.
- IV. How to control swarms when running for comb honey.
- V. A simple and reliable plan for making increase.
- VI. How to save unnecessary lifting in taking off filled supers of honey.
- VII. Taking off the surplus; what to do with the unfinished sections, preparation for the buckwheat flow.
- VIII. Progress in the supers.
- IX. A simple way to put on escapes without lifting.
- X. Taking off the Honey and storing it at the outyard.
- XI. Same, continued.
- XII. Closing words, further suggestions to the plans given in the preceding chapters.

The author says in the preface:

While the book is intended for the specialist, it is none the less desirable for the plain, every-day bee-keeper, with his one home apiary, or for the amateur with his five to ten colonies; and because this book is for the specialist in bee-keeping I have not gone into first principles or the A B C of our pursuit, as the specialist has passed these rudimentary things long ago. There are plenty of good books before one, and all who are desirous of learning of the foundation structure, therefore, have no need of repeating here. The amateur should certainly procure, read, and digest one or more of these books upon entering the ranks of apiculture.

What Mr. W. Z. Hutchinson, editor of *The Bee-keepers' Review*, says:

"A Year's Work in an Out-Apiary" is packed full of the most valuable information that has ever been given to bee-keepers. Like a few other books, it is a difficult one to review. It is so boiled down and condensed that there is very little that can be left out. I am going to do the best I can at it, but I'll say right here that every bee-keeper would do much better to buy the book and read it in its entirety. While the book is really a record of one year's work (12 visits) in an out-apiary, in which, during a poor season (1905), 114½ pounds of section honey per colony were secured, it is descriptive of a plan that was perfected during some ten or fifteen years of previous experimenting. To put the whole thing in a nut-shell, it tells how to manage an out-apiary for the most profitable production of comb honey, and, at the same time, prevent all swarming.

The
A. I.
Root
Co.,
Medina,
Ohio

For the enclosed remittance—
please send *Gleanings* (1 yr. or 6 mos.) to

SPECIAL OFFER NO. D1:

GLEANINGS IN BEE CULTURE, one year (new or renewal subscriptions), \$1.00
One copy of A YEAR'S WORK IN AN OUT-APIARY50

Total

\$1.50

OUR PRICE for the above

\$1.00

Name _____

SPECIAL OFFER NO. D2:

GLEANINGS IN BEE CULTURE, six month's trial . . . \$.25
One copy of A YEAR'S WORK IN AN OUT-APIARY50

Total

\$.75

BOTH for 50 cents

Address _____

Send Doolittle's book, my address below:

Name _____

Address _____

If you are already a subscriber to GLEANINGS, and your subscription is paid, and you want to get the book, take advantage of offer No. D2 by ordering the book for yourself and a six month's trial to GLEANINGS for some one of your bee-keeping friends who is not now a subscriber.

THE A. I. ROOT CO., Medina, O.

If *Gleanings* is to be sent to same party as book, sign only in last two blank lines.

Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give **LIBERAL DISCOUNTS**.

Remember that

DADANT'S FOUNDATION

is the very best that money can buy.

We always guarantee satisfaction in every way.

LANGSTROTH ON THE HONEY-BEE (new edition), by mail, \$1.20.

Send for our prices on Extracted, White-clover, and Amber Fall Honey.

DADANT & SONS, . . HAMILTON, ILL.

Lowest Factory Price —Freight Prepaid

Freight Prepaid on 100 lbs.
or more

35-lb. Roll—108 **\$135**

Sq. Ft.—1-Ply

45-lb. Roll—108 **185**

Sq. Ft.—2-Ply

55-lb. Roll—108 **225**

Sq. Ft.—3-Ply

Order today, or write for
Samples and
Booklet

Freight Prepaid on Breese Bros. Roofing

This is the most liberal special price proposition ever made on Guaranteed first quality rubber roofing. Look at the prices quoted on our three weights of old reliable Breese Bros. Rubber Roofing and remember that these remarkably low prices include freight costs.

You cannot buy anything but cheap, low grade roofing through a dealer, at anything like this price.

Breese Bros. Rubber Roofing is made in our own factory, by a special process of long-fibre wool felt saturated in asphalt, heavily coated on both sides with flexible waterproof compound. Absolutely guaranteed to be waterproof, fire-resisting and durable. Order now and get the advantage of this unusual offer. We pay the freight to all points east of the western boundary line of Minnesota, Iowa, and Missouri and north of the south line of Tennessee.

Write To Us for Three Free Samples to Test—and Booklet

Get these samples of 1-ply, 2-ply and 3-ply roofing. Put them to every test you can think of and prove to your own satisfaction that Breese Bros. Rubber Roofing is positively the best roofing ever made. Breese Bros. Roofing will cost you at this remarkable low price offer, one quarter as much as shingles and will last twice as long. You run no risk by ordering now direct from this advertisement. We positively guarantee satisfaction.

If Breese Bros. Rubber Roofing does not prove to be all that we claim for it, send it back and we will return your money.

We Give the Longest Guarantee

and our guarantee is absolute. We are ready to make good on every claim. We pay the freight to all points east of the western boundary line of Minnesota, Iowa and Missouri and north of the south line of Tennessee.

Order at once—now—today and get the benefit of this remarkable offer. We may not be able to make such a liberal offer again. Or write today for Free, samples and booklet. Delay may cost you money.

The Breese Bros. Co.

Roofing Dept. 76. Cincinnati, O.

**Free Cement and Special Roofing
Nails inclosed in each roll.
Hammer lays ft.
Use on ALL
Build-
ings**



The Building Roofed With ↓ Ruberoid Did Not Burn

SHINGLES HERE
CAUGHT FIRE

RUBEROID HERE.

SHINGLES HERE
CAUGHT FIRE



In Netcong, N. J., a livery stable roofed with Ruberoid stood within ten feet of a factory which burned to the ground. *Behind* and *alongside* this roof of Ruberoid, were shingle roofs which ignited. The Ruberoid roof was literally covered with blazing fragments. But it did not burn.

We do not claim that Ruberoid is fireproof. If the house burns from *within*, the roof will be destroyed whether it be of Ruberoid, of slate, or even of iron.

But a roof of Ruberoid is as safe from fire *from without* as any roof can be. You can safely throw burning coals on a Ruberoid roof. The coals will not set fire to the Ruberoid, nor to the timbers underneath.

Yet its fire-resisting qualities are of minor importance, when you consider the other superiorities of Ruberoid.

For here is a roofing which is sun proof, snow proof, rain proof. It withstands acids, gases and fumes. It is so flexible that it stands the strains of contraction and expansion which cause ordinary roofs to leak.

Only One Ruberoid

Since Ruberoid was invented, nearly twenty years ago, there have been many substitutes — more than 300.

Many of these substitutes have names which *sound* like Ruberoid. And until they are laid and tested, they *look* like Ruberoid. But do not let these facts deceive you.

The secret of the wonderful properties of

Ruberoid lies in the Ruberoid gum which we use. No other maker can use this gum. No other roofing can possibly be so good as Ruberoid.

Ruberoid roofing can be laid by anyone. Once on, it is practically a *one-piece* roof. It also comes in attractive colors — red, green, brown — suitable for the finest homes.

These color roofings are made under our exclusively owned United States and foreign patents. The colors can never wear off nor fade, because they are a *part* of the roofing.

Get This Free Book

Before you decide on *any* roofing for *any* purpose, get our free book which tells about *all* kinds of roofing—the results of twenty years of roofing tests.

It tells the advantages and disadvantages of shingles, tin, tar, iron, "prepared" and other roofings—it is frank, fair, comprehensive.

This book is really a gold mine of roofing information and the reason we send it free is because it tells all about Ruberoid.

To get this book, address Department 34, The Standard Paint Company, 100 William Street, New York.

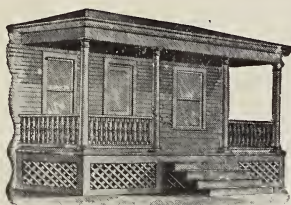
RUBEROID

(TRADEMARK REGISTERED)

Be sure to look for this registered trademark which is stamped every four feet on the *under* side of all genuine Ruberoid. This is your protection against substitutes which many dealers brazenly sell as Ruberoid. Ruberoid is usually sold by but one dealer in a town. We will tell you the name of your Ruberoid dealer when you send for our free book.

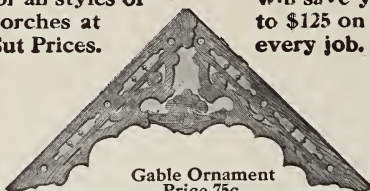
THE STANDARD PAINT COMPANY, Bound Brook, N. J.

New York, Chicago, Kansas City, Boston, Philadelphia, Atlanta, Denver, San Francisco, Montreal, London, Paris, Hamburg



Millwork for this Porch, \$23.38.

**We Sell Millwork
for all styles of
Porches at
Cut Prices.**



Gable Ornament
Price 75c.

**Our Stair Department
will save you from \$60
to \$125 on
every job.**



Oak Stairs, Complete, \$28.59.



"Graceland"
Door with Plate Glass
\$11.25



Windows, 63c.



Pine Door, 77c.



509 Sq. Feet Best
Bldg. Paper, 37c.

Old Houses Made New at Small Cost!

**Write for Grand Free Millwork Catalog
5000 Bargains in Doors, Windows, Mouldings, All
Material for Stairs, Porches, Vestibules, Grilles, &c.**

Quality and Safe Delivery Guaranteed Anywhere

Send for handsomely illustrated Free Millwork Catalog showing all kinds of material for building or remodeling. Everything in the latest styles approved by best architects. Each of the 5000 items offered at a bargain price. You can buy, direct from the world's largest building material plant, whatever you require for modernizing both exterior and interior of your home. All styles of doors, from plain pine to finest Art Front Doors of polished hardwood. Prices 80 cents up. Windows in every size and style, from plain windows at 63 cents to magnificent Venetian Art Glass Windows in beautiful color effects. Material for complete flight of stairs, only \$24.73—an actual saving of \$60 to \$125. You will be surprised at the small cost of Hardwood Flooring, Plate Rail, Beamed Ceilings, artistic Mantels, beautiful Grilles and Colonnades, Sleeping Porches and other up-to-date improvements that any carpenter can put in.

We Undersell Everybody on Building Material

We do a business of over a million dollars a year. We carry immense stocks of guaranteed building material in our own warehouses and lumber yards. No other concern can duplicate our prices. All our material is guaranteed up to the Official Grades of the Sash & Door Manufacturers' Association. We sell for cash and ship everywhere under an absolute guarantee of safe delivery and satisfaction or money back.

If you are going to build, remodel or repair a house, barn or any other building, we can save you from 50 to 75 per cent of the usual cost. Don't fail to send for the Free Catalog of Millwork and Building Material.

**Gordon-Van Tine's Famous Book of Plans FREE!
44 Complete Houses, Bungalows, Cottages, Barns**

The most popular collection of plans for beautiful, practical homes. Up-to-the minute in style. Correct in every detail. Designed by licensed architects. Don't build until you see these handsome homes. The complete Book of Plans mailed free on receipt of 10 cents to cover cost of packing and postage.

Gordon-Van Tine Company

World's Largest Building Material Plant

1718 Case Street

Davenport, Iowa



"Claremont." Door,
with Clear Glass, \$4.50



Art Window, \$3.75.

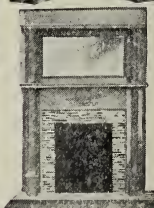


"Manhattan." Door,
Etched Glass, \$3.16.



Price,
\$2.86.

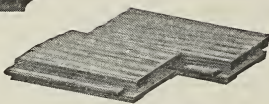
Price,
\$2.83.



Classic Mantel, \$24.75.



Combination Oak Plate Rail and
Picture Moulding, per Foot. 7c.



100 Lineal Feet Oak Flooring, 80c.



Oak Beamed Ceiling, Lineal Foot, 13c.